HEALTH-RESORTS

at Home and Abroad

M. Charteris, M.D.

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KARTE
von
MITTEL-EUROPA
zur
UEBERSICHT DER CURORTE
und
der Verkehrsstrassen.
Beilage zu Dr Steinschneider's ärztlichem Taschenkalender.
Gezeichnet von Ludwig Ravenstein.
nach Angaben von Dr Steinschneider
Brunnenarzt in Franzensbad.
Erklärungen:
Die „Curorte" sind durch folgende Unterstreichungen unterschieden.
Moorcurbäder.
Seebäder.
Kaltwasserheilanstalten.
Klimatische Curorte.

4/6

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BY

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PREFACE

During my enforced absence from active professional work, it has been a pleasure to revise some holiday sketches which, in the form of lectures, were delivered to students attending the Course of Therapeutics in Glasgow University.

I have thought it advisable to add to these sketches an alphabetical classification of health-resorts, and a list of preparations and doses of the principal drugs of the 'Austro-German Pharmacopœia,' given in the metric system, side by side with the preparations and doses of the same drugs, written in the old method as in the 'British Pharmacopœia.' This will afford a guide to medical men and travellers who may not be familiar with the exact relation of the two systems to each other.

I have to record my obligation to my friend Dr Napier, of Glasgow, for valuable assistance to me in seeing the work through the press; and my thanks are due to Dr Steinschneider of Franzensbad, for the map which shows the principal places mentioned.

Glasgow;
June, 1885.

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HEALTH-RESORTS

The ancient belief in health-resorts in general, and spas in particular, as a means of combating disease, is undoubted; and though medical theories have come and gone, and medical tenets have often been exploded, yet no crusade in any age has ever been tried against health resorts.

There lingers around them a superstition deep grained in man's inner nature. An apothecary's mixture is a work of art, often nasty, frequently unseemly. It is nature's handiwork which is carried to the lips, pure and sparkling from the fountains of the well.

Long ago it was fancied that a Εὐδαιμων or healing spirit lingered at the spot, and this idea was not confined to peasants or the illiterate, but it was fostered and stirred to active life by the wise men of the day. Van Helmont, the erudite and sceptic, who purged medicine of many superstitions, in gay and fantastic language, pictured this beneficent deity; and Horace enobled, in the most charming of all his Odes,

> "The fountain of Bandusia
> Clearer than glass,"

as aye worthy of garlands and wine.

Curative wells are still known in Cornwall, and miraculous powers were assigned until the beginning of the present century to Glastonbury. "Thither resorted," says an old chronicle, "numbers of people to drink and bathe, in consequence of a dream of a certain person afflicted with asthma, who was cured by taking it. Some believed the virtue of the water was owing to its passing over the graves of holy men."

This virtue attached not merely to wells with actual mineral ingredients, but even to others where the water was pure and simple. Thus the Holy Well at Malvern was employed for various skin diseases, and the water there is just like other water and has no special characteristics, except that it is organically pure and contains a much smaller amount of saline constituents than is found in most potable waters.

Whilst acknowledging that superstition has invested simple water in certain localities with peculiar curative powers, and that such can in consequence possess no real value, it is yet certain that therapeutic benefit in our country and abroad centres in mineral springs or spas.

Mineral springs have as their constituents various salts, and these issue from the earth in some cases at a high temperature, in others at a middle heat, and in others again cold. The constituents, moreover, are in certain spas numerous, in others they are limited to one or two salts in such proportions as indicate therapeutical value; in some there are no ingredients, the water whether hot or cold being chemically indifferent or pure.

These observations pave the way to a rational

classification of mineral waters, and thus we have, in the bath language of every nation, mineral waters spoken of as:

1. Simple thermal waters.
2. Common salt or muriated saline waters.
3. Alkaline waters.
4. Sulphated waters.
5. Iron or chalybeate waters.
6. Sulphur waters.
7. Earthy and calcareous waters.

Again health-resorts may be simply climatic or with some additional diet cure. Thus we have:

1. Sea-bathing health resorts.
2. Climatic health-resorts at a high altitude, amid snow and ice, or at a warm and equable temperature, amid flowers and sunshine.
3. Climatic health-resorts, where the whey cure, the grape cure, or "well-regulated hydropathic establishments," form the basis, in addition to climate, of treatment.

1. As examples of the first class of "*simple thermal waters,*" we may mention Bormio, Gastein, Pfaffers, Ragatz, Schlangenbad, Wildbad, Buxton, Bath, Teplitz. The majority of these spas are celebrated for their baths. The internal treatment may sometimes supplement these or it may not be prescribed.

The main use of these baths is to allay over-excitability and hypersensibility of the nervous system, and to relieve some forms of paralysis and joint enlargements, also chronic rheumatism and gout.

2. *Common salt or muriated saline waters.*—Chloride

of sodium forms the principal constituent in this class, and in many it is combined with CO_2.* This latter constituent if associated with increased temperature augments the digestive and stimulating character of chloride of sodium, while it soothes nervous irritability and promotes the peristaltic and diuretic action of bowels and kidneys. In the form of baths, also, this combination assists tissue changes and excites the cutaneous nerves. In England, as examples of brine-water baths, may be mentioned Droitwich and Woodhall. Cheltenham and Leamington contain in addition to the chloride, sulphate of sodium, and their waters are taken internally as well as in baths. In "Germany" Kissingen, Homburg, Nauheim, Kreuznach, Soden, Wiesbaden, Ischl, Baden-Baden. In "France" Bourbonnes les Bains, Salins. In "Italy" Ischia. In "Switzerland" Bex.

3. *Alkaline waters.*—A prominent constituent in alkaline waters is carbonate of soda, and on account of its often being associated with chloride of sodium a subdivision is necessary; (1) simple alkaline waters; (2) muriated alkaline waters. As examples of the first class with a hot temperature (*a*) stands Vichy, Neuenahr Mont-Dore; with cold (*b*) Apollinaris, Bilin, Taunus.

As examples of the second class (muriated alkaline waters) (*a*) Ems and La Bourboule represent the hot springs whilst (*b*) Selters, Roisdorf, Rosbach, are cold.

These waters, in addition to assisting digestion, have a special effect in chronic catarrhal affections of the respiratory, digestive, and genital organs.

* Carbonic acid = CO_2, so expressed generally in the text.

4. *Sulphated waters.*—These waters are characterised by their chief constituents being sulphates of soda or magnesia or both together. These waters again, like the former class, are subdivided ; (1) simple sulphated waters or bitter waters; (2) alkaline sulphated waters which contain also carbonate of soda and chloride of sodium.

The principal "bitter waters" are: Püllna, Hunyadi Janos, and other springs near Ofen, Epsom, Friedrichshall. The principal "alkaline sulphated waters" are Carlsbad, Marienbad, Tarasp-Schuls, Franzensbad, Elster. The action of the "bitter waters" is simply aperient. The "sulphated alkaline waters" are considered afterwards more fully ; and in the alphabetical index under their respective headings.

5. *Iron or chalybeate waters.*—Some springs contain only iron, others may be considered "compound iron springs," as various salts enter into their composition, such as carbonates of soda, lime and magnesia, sulphates of soda, magnesia, and lime, and chloride of sodium. (1) Pure iron springs, Schwalbach, Spa, Brückenau, Alexisbad, Tunbridge Wells, and one spring at Harrogate. (2) Compound iron springs, Pyrmont, Driburg, Griesbach, St Moritz, Godesberg, Cudowa. Their designation as iron or chalybeate waters indicates in what special class of diseases they will be serviceable, as anæmia, chlorosis, uterine disorders ; and further in all classes of disease where tonic and invigorating medicines are required to assist blood formation.

6. *Sulphur waters.*—Sulphurous waters contain either sulphuret of hydrogen, or the sulphuret of

sodium, calcium, magnesium or potassium, in definite proportions. Some are thermal, others cold, and a few have, in addition to sulphur, common salt and other solids, as Aix-la-Chapelle and Baden in Switzerland.

Sulphur waters are used for various diseases either in the form of baths or internally, or both combined. During their use the fæces are blackened, and as the sulphur seems partly eliminated by the skin, silver coins become darkened in the pockets of those who take the waters internally. Sulphur waters are prescribed for congestion of the liver, bronchial affections, and especially, as in the case of Aix-les-Bains, for chronic rheumatism, and Aix-la-Chapelle for constitutional syphilis. In addition to these mentioned it may be stated that among the best known "thermal sulphur springs" are Eaux Bonnes, Eaux Chaudes, Baden in Switzerland, Schinznach. Cold sulphur springs on the Continent, Eilsen, Nenndorf, Weilbach, and in our own country Moffat and Strathpeffer; the latter spa, situated in a beautiful highland strath, is highly charged with sulphur.

7. *Earthy and calcareous waters.*—These springs contain earthy substances, especially sulphate and carbonate of lime and carbonate of magnesia. The waters in the form of baths seem to have no special influence, but internally, as can be understood by the lime they contain, they may be taken in dyspepsia to correct acidity and diarrhœa. They are also recommended in chronic catarrh of the bladder, a tendency to gravel and stone, and in eczematous and scaly skin diseases.

Amongst the best known of the earthy spas, Wildungen, Lippspringe, Weissenbourg, Contrexeville, Bagnères de Bigorre. Among the table waters, Saint Galmier and the Taunus Water.

1. *Sea-bathing health-resorts.*—These are well known. Each country has its favourite bathing place. The most celebrated here and on the continental sea-board are referred to in the alphabetical classification. The advantages gained by sea-bathing are so manifest that no special remarks are required.

2. "*Climatic health-resorts.*"—Among those at a high altitude may be mentioned Davos Platz, Andermatt, and various other stations in the Swiss cantons. Health resorts at high altitudes have lately come into special favour because of their value in phthisis. It should be remembered that they can only be useful in the early stages of that dreaded malady, or when it is chronic in character, and attended with no fever or hæmoptysis. They are also useful for people recovering from acute illness, and who are able to take active outdoor exercise. On the other hand, they are distinctly disadvantageous in heart diseases, emphysema, chronic bronchitis, and chronic rheumatism.

Health resorts in temperate or warm climates are chosen for various pulmonary diseases, notably phthisis. Among the best known are Madeira, Hyères, Pau, Mentone, Algiers, Palermo, Upper Egypt, Bournemouth, Queenstown, Torquay, Ventnor.

3. "*Climatic health-resorts*" *assisted by diet cure.*—Among these may be specially mentioned Meran for the grape cure in phthisis, whey cure for bronchial

catarrh, and for convalescence after acute inflammatory diseases. The whey may be from goats', ewes', or cows' milk. These contain all the elements for a healthy and normal metamorphosis, viz. milk sugar, and the salts contained in animal food, with the exception of the nitrogenous plastic constituents.

Among places famous for whey cures may be specially mentioned Gais (Canton Appenzell), in Switzerland.

Various hydropathic establishments are mentioned afterwards. One, however, may be specially recommended from personal observation, Königstein, near Frankfort.

We shall allude in the following pages primarily to well-known spas in our own country and abroad, and afterwards give an alphabetical classification of those and also sea-bathing and climatic health-resorts, depending in the latter sometimes solely on the situation, in others indirectly assisted by artificial baths and selected diet cures.

I am indebted for many valuable hints about these "health-resorts" to my friend, Dr Steinschneider, of Franzensbad, who kindly sent me his little pocket companion of 'Health-Resorts for the Physician' when I was preparing this work for the press. I have also consulted, so far as I could, the leading authorities on this subject in our own country and abroad. During continental holidays I have endeavoured to see these places, and in many I have stayed for weeks, in others I have stayed long enough to become acquainted with the wells and baths and routine of treatment. It need scarcely be added that personal observation of

health-resorts is invaluable nowadays to the physician, for they bulk more largely and more sensibly in the 'Practical Pharmacopœia of Rational Therapeutics,' than they did ten years ago. All, however, cannot visit them, and to many doctors whom hard home duties and exigencies of private practice keep at the grindstone of unremitting toil, I trust my brief observations may be welcome and enable them to select a suitable place for those whose circumstances permit them to leave their business, and sometimes their country, for a breathing space, where health may be sooner regained. To all patients, I would say that the cares of actual busy life must be left behind, and that, if free from these and all worry, they will be more likely to be benefited by a change to places which nature and art combine to make pleasant for the invalid.

I shall allude first to well-known spas in our own country, and select as the first thermal Spa

Bath

The Romans appreciated the waters of this spa, and from the time of the Roman conquest Bath acquired great notoriety. Continental health-resorts have lately robbed Bath of much of its glory, and it has sunk from its position of fame to be simply a comfortable and desirable place of residence. Its waters have been much neglected, but there are signs of returning prosperity, and it cannot be doubted from the ingredients contained in the waters and from the records of the physicians who have resided at Bath, that

certain curative properties justify their use in various diseases.

Bath possesses hot springs, the temperature varying from 112° to 118° F. They contain as essential ingredients, muriate of lime and muriate of magnesia, sulphate of lime and sulphate of soda, with a small proportion of iron; in all, seventeen grains of solid matter being found in the pint, and with this a cubic inch of carbonic acid.

The water is clear and colourless at first, but assumes after settling a whey-like appearance. The taste is not unpleasant, and it appears to produce some sensible effects—a glow in the stomach, a warmth in the head, gentle perspiration, and slight diuresis.

The waters are used externally or taken internally, and by the former method Bath attained its high reputation. The temperature of the first bath should be 96°, and on subsequent occasions it should not rise above blood heat, 98°. The bather remains in the bath for fifteen minutes, and during the time he is immersed in it he is desired to keep his legs and arms in constant motion. On leaving the bath the patient is enveloped in a warm sheet and should be allowed to rest on a couch for a quarter of an hour before being rubbed and dressed. The bath is taken an hour and a half after breakfast, and it is strictly forbidden after long fasting and fatigue.

Used as indicated the external employment of the Bath waters has been found beneficial in various forms of paralysis, notably in lead paralysis and in obstinate sciatica. In flying gout, *i. e.* gout which does not fix

itself in any particular place, the Bath waters have long been considered serviceable, and also in all the varieties of chronic rheumatism.

The waters are also internally taken, but as a rule not until they have been employed some time externally. From a pint to a pint and a half of the water is taken in the course of the day in divided doses. Acting slightly on the kidneys they are given in chronic cystitis and irritable bladder, or in the dyspepsia associated with gout. In irregular menstruation they have been found valuable; and their reputation was at one time great in sterility, how, we at the present day can hardly comprehend.

The time of the year adapted for a residence in Bath is probably the winter, as it is well sheltered, and the mean temperature of the place is 3° higher than that of London.

Matlock (Derbyshire)

In the middle of last century, Matlock became famous. Visitors were attracted to it by its scenery. Its high position with the combination of wood and water and rock, rendered it a natural sanatorium for the enervated invalid, and these advantages were augmented by the wonderful cheapness of living in the place. Three shillings a day was the moderate charge at most boarding-houses. Social intercourse between visitors seemed disturbed by no restraint of etiquette, for it is stated they lived as one family, had common meals, and joined in picnics which

were deemed an essential feature of the outdoor treatment.

The water of Matlock is almost chemically pure. There is certainly a slight impregnation of lime, but this in no way detracts from its clear and sparkling nature, which guarantees "to the invalid that while it may prove useful, it cannot possibly disagree." A large and well-known hydropathic establishment now utilizes the water of Matlock, and the number of visitors annually testifies to the high reputation it has attained in various diseases, notably chronic rheumatism.

Buxton

lies within twenty miles of Matlock and the drives between the two places are pleasant and delightful. The combination of wood and shade and lawn render the scenery not unlike that of Saxon Switzerland. Buxton seems to have been known to the Romans, and some consider that in this respect its claims to priority are superior to those of Bath. Before the monasteries were suppressed, wearied pilgrims journeyed to its well, and hoped after bathing there to be freed from chronic complaints with which they were afflicted. Historically it is noted how Mary Queen of Scots came and stayed at Buxton, and her stately beauty and winning presence contributed to make her the popular as well as reigning favourite of the spa. Her steps appear to have been watched by the emissaries of her cousin the virgin Queen of England, and her kindly

and gracious words to servants or visitors were misrepresented and reported to the Queen. Elizabeth herself had confidence in the Buxton waters, and when the polished Burleigh was sick his stern mistress took him to Buxton and commanded him to drink of the spring. He evaded the mandate at first, but afterwards mixed the waters with sugar and found them then so palatable that he took cheerfully four or five pints daily.

Since Elizabeth's time Buxton has been a well-known and favourite health-resort. Its elevated position, nearly a 1000 feet above the sea-level, and its cold clear atmosphere constitute such an effectual barrier to disease that epidemic fevers are almost unknown. The Buxton waters, like that of Matlock, are almost pure, containing only two and a quarter grains of lime, soda, and magnesia salts to twenty oz. of water. The temperature of the water is 82° F. and it is largely charged with nitrogen gas. The supply of water is abundant, for it issues from its sources at the rate of 300 gallons per minute. The taste is sweet and pleasant, and the water is supposed to have a stimulant and alterative action. Two or three pints are drunk during the day at stated intervals, one dose being taken half an hour before breakfast, the second at two o'clock in the afternoon. Moderate exercise is enjoined immediately afterwards. Their internal use is recommended in weak digestion and in chronic catarrh of the bladder. Formerly their use was considered serviceable in moderating the severity of diabetes, but later observations have not confirmed this statement.

The waters of Buxton are chiefly famous for their external application. The bath apartments are neatly and cosily furnished and a temperature of 72° or 74° F. is maintained during the day. As the supply of water is copious, there is a constant influx and efflux of the fluid, and this appears to lend variety and pleasure to the bather. The sensation when immersed in the bath is at first that of a slight shock, but this rapidly passes away and is succeeded by such a tranquilizing feeling of rest and comfort that it is described by some as like being anointed with cream. The bather remains in the bath for ten minutes. Undoubted medical testimony shows that Buxton baths do good in gout and rheumatism, when these are of a chronic nature. A healthy influence is also exerted in hysterical joint disease and notably in sciatica. A sufferer from chronic rheumatism thus expresses himself with regard to the benefit attained :

"With joy and gratitude do I reflect on the efficacious qualities of the waters. I recollect with rapture the flight of pain and the reanimation of my long, long crippled limbs."

The season for Buxton is summer and autumn.

2. *Salt or muriated saline waters.*—Examples of these waters are found at Cheltenham (Gloucestershire), Leamington (Warwickshire), and Scarborough (Yorkshire). These spas contain in varying proportions two well-known cathartics, viz. Glauber's (sulphate of soda) and Epsom salts (sulphate of magnesia).

The ingredients of the three spas mentioned are as follows, in twenty ounces :—

	Cheltenham.	Leamington.	Scarborough.
Sulphate of magnesia	17 grs.	2 grs.	66 grains in all of the same salts.
Sulphate of soda	14 „	32 „	
Chloride of sodium	51 „	67 „	
Chloride of magnesium	7 „	12 „	

The solid ingredients in twenty ounces are thus not great and may be remembered generally by the fact that "the strongest is not half so strong as the German Friedrichshall, which again is only half that of Püllna."

Unfortunately the taste of our saline waters is not pleasant and they are apt also when drunk to occasion flatulence and even pain in the stomach. They lack the essential ingredient for dispelling these symptoms by the absence from their composition of carbonic acid. As will be afterwards seen, spas of a similar character on the Continent are impregnated with this gas, so that the water when drunk sits lightly on the stomach and the feeling engendered is not heaviness, but buoyancy and ease.

Our saline mineral waters are best taken before breakfast at their source, mixed with warm water.

In this way their action is more certain, and to some extent the unpleasant sensations created by their use when cold are obviated. Two glasses containing about eight ounces are the usual dose, an interval of twenty minutes elapsing (which should be filled up by a smart walk) between the first and second dose. A copious stool is generally the result of their action.

A brief notice will now be given of the individual spas mentioned.

Cheltenham

was noticed in 1715 and in subsequent years attracted many visitors. It is and ever will be an attractive town, for it is the centre of a well-known hunting district and it possesses a mild and agreeable climate and excellent schools. Fifty years ago it was undoubtedly the most fashionable watering-place in England, but in recent years it has not attracted so much attention.

There are different wells at Cheltenham, but all of them have the saline ingredients previously mentioned. One of these seems to be the reigning favourite, and it is termed an "ioduretted saline" because a small proportion of iodide of soda enters into its composition. There was an old saying "He who respects No. 1 will not neglect No. 4." When Cheltenham was in the height of its popularity it was the favourite resort of Anglo-Indians, whose livers were enlarged and whose skins were jaundiced. Such patients considered that a restoration to health could only be obtained by the use of the Cheltenham waters, and this idea was fostered by the assertion that if mercury had been given in the East, it would be washed away, if retained in the system, by the taking of the natural aperient beverage. Much repute also was attached to the waters in dysentery, when it had assumed a chronic type, and well-merited notoriety is still enjoyed by them when employed in obstinate constipation, old enlargements

of the liver and spleen and kidney derangements taking the form of gravel or calculus.

Leamington

the centre of Warwickshire and also, it is stated, the centre of England, was known to possess medicinal wells so far back as 1586, but it was not until 1811 that they became well known. From that year until 1831 the progress of Leamington was rapid, more rapid than that of any other recognised spa in this country.

Two circumstances notably contributed to this:

1st. The Anglo-Saxon world was under the spell of the Waverley Novels, and when Scott wrote the story of 'Kenilworth' and told of the knights and courtiers who once held high revel there, and with all the wealth of his luxuriant fancy pictured the Warwickshire county with its charming scenery and beautiful air, public attention was directed to Kenilworth and consequently to Leamington. Moreover, the imagination was stimulated by the near proximity of Stratford and the old churchyard where, washed by the united waters of the lazy Leam and the sluggish Avon, the dust of the greatest of all English poets quietly reposes.

2nd. Dr Jephson, a graduate of the University of Glasgow, settled in Leamington in 1830. He was a man of singular ability, uniting with a courteous demeanour a rare insight into human character in the varied aspects it presents to a gifted physician. He set himself to the task of making Leamington great and he accomplished his end. He became the most famous provincial physician of his day, nay, he even

outstripped his metropolitan contemporaries. His opinion was considered infallible and trusting patients flocked to his Leamington abode, and I do not wonder that this was so, for some years ago, when I had the privilege of meeting him, and when he was old and blind, he yet retained the impress of a strange dignity and insensible mastery over men. His criticisms were keen, his wit was sharp and trenchant, and his memory wondrously retentive. Jephson's name still lingers in Leamington and his sayings are remembered at social professional gatherings, while the public gardens given by him to the town will ever identify his name with the place of his adoption and fame.

Chalybeate Spas

Many waters in this country are strongly chalybeate, but the combination of chloride of sodium or sulphate of soda with the iron they contain, renders their astringent and tonic character somewhat dubious. While there are many excellent chalybeate spas abroad, we are in this country restricted chiefly to one, viz. Tunbridge Wells (Kent). The temperature of the water is here 50° F. It contains only one grain in twenty ounces, including one eighth of a grain of iron, with carbonic acid.

The water is clear and the chalybeate taste is pronounced, but not disagreeably so.

In consonance with erroneous ideas on the subject it was formerly advised to take large quantities of the water. Thus patients were ordered to begin with

thirty, forty, or fifty ounces, and to increase the quantity daily until a hundred, a hundred and fifty, and even two hundred ounces were taken, when the dose was gradually diminished. Now, in accordance with more correct physiological and therapeutical considerations, from half a pint to two pints a day is justly deemed sufficient for the system to assimilate. In olden times the ferruginous waters were considered highly efficacious in stone and gravel, but their supposed virtues in these affections have in time disappeared. They are, however, of undoubted benefit in chlorosis or anæmia, and in conditions associated with a deficiency of iron in the system. Thus they are eminently suitable in convalescence from any acute or febrile disease, and these virtues are enhanced by the air, which is soft, genial, and grateful to the invalid.

Sulphur Spas

The best known sulphur spa in this country is undoubtedly that of Harrogate, in Yorkshire. The bog-field surrounding the town teems with sulphur, and is the certain natural manufactory for sulphurous preparations. Indeed, within a circle of half a mile from the Royal Spa no fewer than a hundred sulphur springs can be found. The old sulphur spring at Harrogate contains one hundred and thirty-seven grains of solid matters in twenty ounces. These are chiefly chlorides, with 3·12 cubic inches of carbonic acid gas and 1·4 of sulphuretted and carburetted hydrogen, the exact composition in twenty ounces being :

Chloride of sodium . . 108 grains.
Sulphide of sodium . . 1·9 ,,
Carburetted and sulphuretted hydrogen,
1·4 cub. in. and 3·12 cub. in. of CO_2.

The taste of the strong Harrogate sulphur waters is very disagreeable. Rotten eggs, bilge water and brimstone are epithets familiarly applied to it by visitors and patients at the spa. The action in large doses is purgative; in smaller doses it constitutes an excellent alterative.

Harrogate may be considered the Homburg of England, although the constituents of the two spas are essentially different. Like the German spa, it is a favourite resort for wearied merchants and tired brain-workers who have reached the middle period of life. In such men we often find abdominal congestion, costiveness, hæmorrhoids, and apoplectic tendencies, and when such conditions exist, simply or combined, Harrogate waters are found to be valuable. Practically also, though the mode of action is difficult to explain, the waters have always had a high reputation in various skin diseases, especially chronic eczema, prurigo, and lichen, and also in syphilitic eruptions, after a full course of mercury has been taken.

It may be added that Harrogate, in addition to its sulphur, contains also two chalybeate springs. The new spring has sixty-two grains in twenty ounces, the ingredients being chiefly chloride of sodium, chloride of magnesium, chloride of potassium, chloride of calcium with protochloride of iron, carbonic acid, and nitrogen.

The waters, chalybeate and sulphur, are taken at

an early hour, from 7.30 to 9 a.m. The principal well stands in a large common some distance from the chief hotels, and the bracing walk over the breezy downs is keenly enjoyed in the morning air. Harrogate is really an invalid residence. People go there in search of health,—not as to Scarborough, in hope of enjoyment. Those who are not ill find Harrogate insufferably dull.

In Scotland the two chief sulphur wells are those of Strathpeffer and Moffat. The former is daily becoming more frequented, and lies amid wild and picturesque scenery, at the foot of Ben Wyvis, in Ross-shire. The two chief wells are strong sulphur springs. The upper contains eighteen grains of solid ingredients in twenty ounces, the constituents being chiefly sulphates of soda and lime, with three and a quarter cubic inches of sulphuretted hydrogen. The lower has thirteen and a half grains of the same salt in twenty ounces, but with only one and three-quarter cubic inches of the gas.

The upper well is the strongest sulphur spa in Britain, and its action is powerfully diuretic, and rather constipating. The usual quantity taken is three tumblers before breakfast, and as many more in the afternoon. After a short course the sulphur sensibly and visibly saturates the system, for the cuticle often comes off in scurf, as in the desquamation from scarlet fever, and when the underclothing is shaken over a fire a blue flame arises, and the odour is unmistakably sulphurous. Chronic cases of sciatica, lumbago, and rheumatism here find great relief.

Life at Strathpeffer would, for invalids, be greatly enhanced by some artistic decorations round the spas and the presence of a lively and cheerful band. As it is, Strathpeffer presents to them simply the grimmer features of austere Scotch country life, the midday gossip on the arrival of the daily coach, and demure questionings as to the nationality and pedigree of fresh visitors.*

Moffat, a town of about 2000 inhabitants, in Dumfriesshire, Scotland, is a favourite health-resort. It has also a sulphurous spa which is situated about a mile from the town. The air of Moffat is singularly invigorating and in the autumn season there is usually little rain. Exercise is thus freely indulged in, and out-door sports are keenly enjoyed. The neighbourhood of Moffat is famous for its romantic scenery and historic associations. Up the Vale of Yarrow the Ettrick poet sung the story of the fair Kilmeny and told his wondrous tale of the Brownie of Bodsbeck. St Mary's Loch was celebrated by Sir Walter Scott.

> "Thou knowest it well—nor fen nor sedge
> Pollutes the pure lake's crystal edge;
> Abrupt and sheer the mountains sink
> At once upon the level brink;
> And just a trace of silver sand
> Marks where the water meets the land."

Wordsworth says :

> "The swan on still Mary's Lake
> Floats double swan and shadow."

Ecclefechan, the birth- and burial-place of Carlyle, can be reached from Moffat in an hour by train.

* The railway lately opened will doubtless make it livelier.

FOREIGN HEALTH-RESORTS

Carlsbad or Karlsbad

We shall begin the notice of foreign health-resorts by speaking first of Carlsbad, which justly retains the appellation of "The Queen of Watering Places." The district of Eger in Bohemia contains four celebrated spas—Marienbad, Franzensbad, Teplitz and Carlsbad, and of these Carlsbad is certainly the most famous.

It may be described as lying somewhat in a hollow, and the town is divided by the River Tepl. The first impression of it is that it lies low, but this is not actually so, for it is 1280 feet above the sea level. Numerous bridges connect the two sides of the town, and the walks along the riverside are tempting and pleasant and stretch from the river brink up to the pine-clad mountains. On the granite stones, near to these walks, are often seen hewn a sentence or two, telling the gratitude of someone who had come ill and gone away cured by the efficacy of the Carlsbad waters. These votive tablets are peculiar to Carlsbad and are not seen at any other continental spa. The Sprudel is situated right in the centre of the town and impresses the visitor with wonder, which is increased rather than diminished by closer inspection. In the

centre of tho room a big round bubbling cauldron is observed from which, propelled by subterraneous force, a stream of water is thrown up, four or five feet high, with a convulsive thrilling throb. This stream descends in scattered spray, and a cloud of steam hovers over the cauldron and rises to the roof of the building in which it is enclosed. The continuous restlessness of this subterranean pump, the hot sensation imparted by its vapours, the peculiar hissing and throbbing of the upheaved waters, fill the mind, even in the nineteenth century, with wonder and awe, and one can still fancy how centuries ago its origin was considered divine.

The column of water thrown up is sometimes solid; at other times it breaks into graceful drooping curves, which fancy likens to a weeping willow. Glasses are fixed on long poles and dipped down into the cauldron, and these when filled are slowly drunk by those who take the water in the early morning.

The temperature of the water is 167° F. and the principal constituent found in it is soda. There are contained in sixteen ounces of the water:

1. Glauber's salt—sulphate of soda . 19·96 grains.
2. Carbonate of soda . . . 9·06 „
3. Common salt 8·7245 „
4. Gases, carbonic acid, 7·8033 grains and a trace of nitrogen.

Of thirty-one grains of solid substances found in one pint of the Carlsbad water twenty-eight are sodic salts. The proportion of iron is small and is represented by $\frac{1}{6}\frac{3}{2}\frac{}{5}$ parts of a grain in one pint.

The taste of the water is saltish at first, afterwards

distinctly alkaline. It gives a pleasant warm feeling to the stomach when drunk, and somewhat quickens the circulation.

Analysing the chief constituents of the Carlsbad waters and their supposed action on the system, it may be remarked that the carbonic acid contained in them acts on the skin, stomach, lungs, and lymphatic system as a gentle stimulant.

The salts of soda tend to augment the formation of blood-corpuscles and regulate the whole economy of the system. The sulphate acts as a pleasant and grateful aperient. The carbonate is milder in its action and removes acidity and concretions which may have formed in the intestines.

The waters do not act quickly on the bowels. An hour or two may elapse after two or three glasses are taken before there is any desire for evacuation. Then there is a liquid stool, dark brown, sometimes green in colour, evidencing a distinct action on the liver and an increased flow of bile. Sometimes the water does not act as an aperient, especially at the commencement of the course, and this may give rise to annoyance and alarm. In such cases it is necessary to take a teaspoonful of the powdered Carlsbad salts in the water for a few days. After the bowels become loose this may be dispensed with, for an easy action is afterwards maintained during the time the waters are taken.

The urine is increased in quantity, but not immediately, generally not before the fifth or sixth day. There is a change also in the urine, for it becomes

faintly acid, sometimes slightly neutral, rarely alkaline in reaction.

It is said that there is a decrease of urea and uric acid with an increase of phosphates.

A strong influence seems to be directed to the nervous system by the use of the waters. Thus patients who have seemed to be completely cured of ague may, while they are taking them, have a distinct relapse and a return of their complaint, and occasionally a fit of the gout is brought on towards the end of the cure.

The quantity taken is as a rule three to five cups, about thirty ounces in all. Each of the cups contains about six ounces, or about one third of a pint. An interval of a quarter of an hour elapses between the taking of the cups, and this is spent in walking quietly by the river or under the colonnade. When the last tumbler is taken patients are recommended not to return home, but to saunter about for an hour until the waters are completely digested and an appetite for breakfast is engendered.

It is advisable always to begin with a small quantity, one to two cupfuls, and then gradually the quantity may be increased. Giddiness and headache are sometimes experienced by their use for the first morning or two, but this usually passes away and there is afterwards no unpleasant effect.

It is interesting here to observe that Carlsbad has been known as a strong thermal watering-place for five centuries, but during the first two hundred years the waters were never drunk, but only bathed in.

In 1520 Dr Payer recommended them to be taken internally, and bathing became unpopular and was almost entirely abandoned in the middle of the last century. Now the utility of the waters, both for bathing and drinking, is justly recognised and recommended. When drinking the waters first came into vogue immense quantities were taken; commencing with fifteen or eighteen cups, about 120 ounces, the number was actually increased to thirty or even forty cups, over 200 ounces. Their chief use was then considered purgative, and hence the more that was taken the greater was the purging, and the potency of the waters was thus specially demonstrated.

A much more rational system is now adopted, and the quantity drunk rarely exceeds what has been mentioned, viz. thirty ounces in a day.

For what maladies has experience shown that the Carlsbad waters are beneficial? The answer to this is, they are chiefly prescribed for abdominal complaints, gout, malaria, chlorosis, and diabetes. They are specially indicated in the variety of symptoms grouped under the term dyspepsia. In dyspepsia we often find that there is vomiting, headache, want of appetite, furred tongue, generally constipation and a low nervous condition which is said to be an "all out-of-sorts state." With such a train of symptoms there may be stoppage of the bile and slight jaundice; then the use of the Carlsbad waters is attended with the happiest effects.

Again there may be pain which sets in after eating any kind of food. There appears to be a spasmodic

contraction of the stomach as if it were squeezed by the hand. In most cases this is dependent on over-acidity, and occasionally it is due to pressure of the liver on the stomach. Then the Carlsbad waters are said to have a wonderful effect.

In habitual constipation, when, although the stools may be regular, only part of the fæces is passed, hard lumps seem to be left and occasion breathlessness, a feeling of tension, headache, and depression. The use of the waters is here recommended and after discontinuing them the patient is advised to go to stool at a fixed hour every day.

There may be chronic intestinal catarrh, the opposite of constipation, in which there are frequent stools, tenesmus, liquid and slimy evacuations. In such cases the treatment is begun by the patient having for two or three days a gentle dose of castor-oil, and this is succeeded by the taking of the waters in small quantities.

Carlsbad has long had a great reputation in congestion of the liver, with pain and enlargement of the organ, and in the first stage of cirrhosis. In the case of gall-stones, there is no proof of the waters dissolving them, but elimination is effected by their use, and the formation of fresh concretions is prevented.

Splenic enlargement, the result of ague, is sensibly benefited by the water, as the experience of those who have had malarial fever abundantly testifies. Gouty deposits capable of absorption disappear at Carlsbad, and the dyspeptic state associated with gout is greatly improved.

In diabetes, when the Carlsbad waters are taken, there is often seen temporary alleviation of the graver symptoms of the disease. In a few days the effects of the waters are manifested, for the great thirst and dryness of the mouth are relieved and the excessive secretion of urine containing sugar is notably diminished. In some slight cases the improvement seems permanent. In other cases patients require to make an annual pilgrimage to Carlsbad and a fatal and speedy termination of the disease is thereby averted. Dr Kraus, a well-known physician at Carlsbad, gives his unbiassed testimony to the good they do in diabetes, from the records of many cases. He states, however, that he has only seen two cases perfectly cured. By this statement he means that sugar disappeared entirely from the urine, and that in after-years on testing it he was unable to detect any. These cases had been marked as diabetic for several years before the patients came to Carlsbad.

I may add that the diet at Carlsbad for all the patients is extremely rigorous. Butter is not allowed, potatoes are forbidden, stale bread in small quantities only is permitted, all greasy substances are avoided. Mutton and beef are taken free from fat and the use of sugar is greatly diminished.

Marienbad

This spa is distant from Eger about an hour by the railway. The ascent to it is steep, for it lies upwards of 2000 feet above the sea level. It is situated on a

meadow, through which a small stream flows, and it is surrounded by pine forests.

At the upper end of the town is the Kreuzbrunnen, or principal well. The water is clear in colour, sharp and pleasant to the taste. Marienbad is generally spoken of as a cold Carlsbad—the composition of the waters being the same. They differ only in the one being a hot, and the other a cold spring.* About the same quantity of water is taken as at Carlsbad. A longer interval is, however, recommended between the beverages, and thus it requires an hour and a half to complete the drinking of four glasses of the Marienbad Spa. The result is a free and copious and painless evacuation from the bowels; after which a light breakfast is taken consisting of a cup of coffee and a rusk or two. Butter is not allowed.

The water is drunk in the early morning, and the time between ten and eleven is occupied with bathing, and after that a smart walk is generally indulged in until one o'clock, when dinner is served. This usually consists of soup, two courses of meat or fowl, with vegetables, as carrots or French beans, &c., occasionally a little rice, never any potatoes, butter, or cheese. A very light pudding, with some dried fruit, forms a dessert.

All salads or fresh green fruits are interdicted, as they interfere with the advantages obtained from the water and cause heartburn and various stomachic derangements. After dinner most people betake them-

* Though Marienbad contains similar salts to Carlsbad it does so in larger proportions: sulphate of soda 36·26, bicarb. sod. 12·39, and chloride of sodium 11·16 grains, in sixteen ounces of the water.

selves to the woods and walk about until seven or eight in the evening, when supper is generally taken. This consists of a steak or chop or part of a fowl and a small piece of bread.

The first sensation on drinking the Marienbad waters is a cold pleasant feeling in the stomach with a sense of tightness and fulness of the arterial system. This, however, does not last long, but disappears after a brisk walk, and after the movements of the bowels commence. Upon the whole the drinking of the waters imparts a lively fillip to the system, and has been likened by some to the stimulating action of iced champagne. There is no extreme purgation in the quantity taken as ordered, and there is no attendant weakness or nausea. On the contrary, there is a sense of lightness and vivacity, and a desire for exercise which is peculiar.

The evidence of the physicians at the spa is that the use of the waters removes faulty and offensive secretions previously lodged in the intestines, and that the Kreuzbrunnen also restores permanently any lack of digestive power. Undoubtedly it seems to restore digestive tone, and is particularly efficacious in disorders connected with the stomach. Some people come to Marienbad for this, but the great majority are attracted to the spa by the reputation it has obtained in reducing fulness, plethora, and obesity. A sedentary life, little exercise, and rich food seem to predispose certain people, especially Germans, to corpulence. This becomes in reality a disease, and prevents any enjoyment of life. It appears to attack

both sexes, and not to be particular as to the age. The taking of the Marienbad waters has certainly a great effect on obesity. Weight is lost insensibly, and in excessive cases may be reckoned at 1 lb. per day during the three weeks' course. A lady, staying at the same hotel where I was, took the waters in the way I have mentioned, and never ceased walking from her dinner hour until eight in the evening. She lost 26 lbs., her personal appearance was decidedly improved, and full of life and with restored health she returned home to testify to the virtues of the spa. The weight of all patients coming to the spa is carefully taken, and the reduction obtained is observed at the end of the course. On the paper recording the weight is seen the picture of a man with protuberant stomach before using the waters, and their effect is observed in a corresponding picture where this is notably diminished, and he appears to have returned to normal dimensions. It is headed "Gratitude," and states, "This is before and after Marienbad."

The dietary is certainly "Banting," and is carefully studied. Something may be ascribed to this, and to the exercise taken, but no one who has been at Marienbad will deny that the waters are the prime factors in reducing the corpulence.

Chronic dysentery seems also to be greatly benefited by the use of the waters. For this distressing complaint I consider Marienbad superior to Carlsbad. In such cases three weeks' drinking of the Kreuzbrunnen is recommended, and afterwards the waters of the Ambrosiusbrunnen, another spa at Marienbad,

and containing a considerable proportion of iron, are ordered.

Men who have had apoplectic seizures are advised to go to Marienbad. It is thought that the use of the waters obviates any tendency to cerebral congestion.

Toeplitz or Teplitz

This place is the oldest spa in Germany, and has been the resort of many invalids for eleven centuries. Its utility therefore cannot be gainsaid in certain complaints. It is three hours from Carlsbad by railway, and is situated in a large and pleasant valley. It may be considered a typical thermal spring, and the waters are used for bathing, being rarely taken internally.

The average temperature of the waters is from 29·5° to 39° R. There are seven large bathing establishments in Teplitz and two in the adjoining suburb of Schönau. The bathing arrangements are admirable. The rooms are large and well ventilated, and the baths are of marble or porcelain.

The floor of the bath is divided into an upper and a lower portion. In the latter in the centre of the room is a sunken basin of an oval shape, lined usually with porcelain. Descending by three steps immersion in the water in the bath is gradual. Two cocks of hot and cold mineral water are placed in the centre of the bath, and can be turned as desired to produce any temperature of the water. The temperature of the room is generally about 73° F., and of the

bath about 96° F. The water is clear and inviting to the bather. In a few seconds after lying down in the bath the skin, formerly smooth, becomes hard and wrinkled, and the general condition produced is somewhat similar to that seen in a washerwoman's hand after a hard day's work. This state of matters continues for a considerable time after leaving the bath, and the sensation imparted is novel and strange. There is no appreciable increase of the pulse while in the bath, and there is no tingling of the skin.

If, however, the temperature of the bath is increased to 100° F. or upwards, there is then some slight excitement of the circulation, followed by a sense of heat, and succeeded after leaving the bath by profuse perspiration which lasts some time.

Emerging from the bath, where the bather rests for about a quarter of an hour, he is carefully rubbed and dried with warm sheets by an attendant, and afterwards reposes on a sofa for a quarter of an hour.

Therapeutical effect of Teplitz.—These baths are specially recommended in cases of suppressed gout, chronic rheumatism, with severe night pains, diseases of the joints, and crippling of the limbs.

"With proper care," says an experienced practitioner, "I should not despair of any patient recovering from all the ailments attendant on gouty tyranny."

"It matters not," says another, "whatever may be the cause of the crippling, these baths possess the power of restoring motion and elasticity."

There is no doubt that the baths have a wonderful effect in removing the gouty chalk stones, and of

relieving the chronic thickening of rheumatic joints. After a stay at Teplitz and trial of the baths it is no uncommon thing to see crippled patients completely restored to health, and leaving behind them sedan chairs and crutches.

Teplitz, it may be added, lies amidst moderately elevated hills of granite. Its surroundings are interesting and pleasant. Tradition says that its hot mineral springs were thus discovered: A herd of pigs ran into the hot scorching spring which issues from a crevice in a porphyry rock near the present Hauptquelle. Their grunting attracted, and their distress proclaimed, the existence of the "hot water" into which they had too prematurely fallen.

A stone bas-relief marks the spot of this traditionary story.

Franzensbad

This spa has two wells, Franzensbrunnen and Salzquelle, which are prescribed for different ailments. The Franzensbrunnen has a temperature of 53° Fahr. The water is clear and has a prickling, fresh, and agreeable taste. The presence of CO_2 is observed by the bubbles seen adhering to the sides of the glass, and the presence of iron is detected by the astringent feeling left in the mouth after the waters are drunk. There is more CO_2 in this spa than in any other popular German spa with the exception of Geilnau and Pyrmont. The chief saline ingredients are sulphate of soda, chloride of sodium, and bicarbo-

nate of soda. The proportion of iron is about one-third of that contained in the Kreuzbrunnen of Marienbad.

This spa is indicated when iron is requisite for the system, but with the proviso that there should be no disorder of the digestive organs and no great nervous excitement.

Especially is it useful in anæmia and hydræmia following on acute constitutional disease and resulting in great poverty of the blood. It is also beneficial in the chlorosis of young girls at the age of puberty.

It has a high reputation for sterility when this is due, as it often is, to an impoverished blood-supply, and when it is not dependent on any organic disease of the uterus. In fact, it is the place selected by obstetricians in Germany for chronic diseases of the genito-urinary system of females. It is pre-eminently, therefore, the ladies' spa of Germany.

It is also recommended after Carlsbad and Marienbad if the system has been in any way reduced by the treatment at these places.

The other spa, the Salzquelle, has water colourless, bubbling, weak, alkaline, yet with a pleasant taste. It has no iron, but the principal salts are the soda salts as in the Franzensbrunnen.

It is supposed through the Glauber's salts and free CO_2 to stimulate the whole digestive tract, to foster the follicular action of the stomach, and to promote the peristaltic movements of the intestines. If warmed its action is increased, and it decidedly influences the liver and pancreatic secretions. It is said to reduce

engorgement of the spleen and liver, and to neutralise superfluous gastric juice and to increase the secretion of urine and prevent over-acidity.

The Salzquelle is recommended for chronic derangements of the digestion whereby anæmia and debility are produced. Thus, it is prescribed for chronic dyspepsia associated with acidity and eructation of sour gases; for chronic catarrh of the stomach with colic and diarrhœa, or when there is constipation. It is also given when there are derangements of the genito-urinary system. It is said to wash away small concretions from the kidneys, and to prevent the formation of others.

The chief attraction, however, at Franzensbad is the excellent mud baths it possesses. There are mud baths also at Marienbad and Carlsbad, but these are not to be compared with those of Franzensbad. The reason for this is obvious, for Franzensbad stands on and is surrounded by the materials of which these baths are composed. It is situated on what is known in Scotland as a "peat moss." As you tread the turf in the vicinity of the town the shaking as of a yielding elastic floor is felt. When the turf is removed the cause of this is easily explained, for beneath the turf is a stratum, in many cases twenty feet thick, of soft muddy substance, jet black in appearance and moist to the touch. Through it there extend thin plates of iron pyrites, having deposits on the under surface of fossil plants of the reed and broom. These plates are hard. They are found at all depths, and after exposure to the air for a few

days become covered with a yellowish-green saline coating, acid to the taste.

This bog earth, when touched by the tongue, imparts a sharp acidulous taste of sulphuric acid. Litmus paper is at once reddened when in contact with it, and the smell is like that of sulphuric acid.

This muddy earth is brought into the courtyard of the large bathing establishment. It is diluted with water from one of the springs, and then steam is passed through it until by proper mixing and stirring it feels like a soft poultice. All undissolved clots are carefully removed. When it is considered sufficiently prepared, a bathing-tub resting on four wheels is nearly filled, and moved into the establishment when it is required for bathing. The temperature at first is high, but it is cooled down until it reaches 80° Fahr. Into this black and unsightly conglomeration the bather, undressed, betakes himself, and rests in it for about twenty minutes. A peculiar fresh, not disagreeable, acid smell is detected, and the effect on the skin is soothing and delightful in the extreme. There is at first some slight increase of the respiration and a kind of panting sensation, which, however, soon wears off and is succeeded by a dreamy quietness.

Stepping out of the bath at the expiry of the time mentioned, the appearance presented by the bather is not prepossessing. Here and there the white skin shines through its dark dripping covering, but the general aspect is dirty and repulsive, and the plunge into the fresh clean water of a corresponding

bath is relished with glee. Here gradually the peaty covering is removed, and the skin becomes fresh and glowing and satiny to the touch.

A kind of feeling as if you are as clean as water can make you remains with the bather during the rest of the day, and the enjoyment is heightened by a sensation as if you had been gently ironed and smoothed like a well-laundried table-napkin.

This mud bath has an excellent effect in cases of nervous excitement and hyperæsthesia. It is a producer of sleep, and calms restlessness and dispels fidgety sensations.

Homburg v. d. Höhe

Homburg lies in central Germany, about half an hour by rail from Frankfort, and can be reached from London in twenty-one or twenty-four hours. It is situated 600 feet above the sea level, and about two miles distant from the south-eastern ridge of the Taunus Mountains; it has a peculiarly fresh, dry, and bracing atmosphere. The heat is not excessive during the day, and at night a keen air comes down from the mountains. Its natural beauty is heightened by all the resources of art. Lovely gardens and shaded alleys encompass the town and tempt the invalid to outdoor exercise, and in following the pathways through the woods, so artistically and beautifully formed, as M. Labat says, "on oublie facilement la distance, et cette promenade remplit ellemême une des conditions hygièniques de la cure."

The mineral springs of Homburg are five in number: the Elizabeth, the Kaiser, the Stahl, the Ludwigs, and the Louise. Of these the first and the last are chiefly prescribed.

The springs are situated in a park a short distance from the town. The waters bubble up, clear and transparent, into stone basins, which are protected by an iron railing. From 6 to 8 a.m., the majority of the visitors at Homburg come to the fountains, and receive in eight-ounce glasses their daily morning draughts. The proportion taken of the Elizabeth spring varies. From two to three glasses are, however, usually prescribed, and one is drunk at intervals of from fifteen to twenty minutes. The large proportion of carbonic acid contained, in combination with the salts, disguises the taste of the latter, and the water is fresh, cold, and agreeable to the palate. Its immediate effects are a sense of heat in the stomach and afterwards in the whole intestinal tract, and this is combined with a feeling of buoyancy and elasticity in the whole frame. Generally after an interval of an hour, there is a very copious stool, which is passed freely and without the slightest pain. Breakfast is taken without any nausea and with great relish. The quantity of urine passed during the twenty-four hours is considerably increased.

Though the use of the Elizabeth produces at first a very liquid motion, this is by no means the main desideratum. On the contrary, if any diarrhœa is induced, the quantity taken must be diminished. Dr Spiess, the well-known physician at Frankfort, told

me if this was the only effect desired, patients might as well remain at home and take a dose of Epsom salts every morning. The main object of taking the waters is to keep the various constituents of the spring in the system, and to produce a kind of alterative reaction. To accomplish this, it is necessary to continue them for at least three weeks, when a kind of saturation of the system take places, and what is termed the crisis supervenes. This is ushered in by no violent symptoms. The patient simply feels more lassitude than usual, the waters are not taken with the same relish, the appetite may be somewhat impaired, and there is a decided disinclination for any exertion, whether physical or mental. During the remainder of the patient's residence, the dose is gradually diminished by one glass daily.

Pre-eminently the waters are indicated in any venous congestion of the abdominal organs. "Les catarrhs de l'estomac, un état subinflammatoire sans acuité" of continental physicians, corresponding to some forms of dyspepsia familiar to us at home. Sluggishness of the liver, induced in whatever way, whether by too luxurious living at home or a prolonged residence abroad, is undoubtedly dispelled, and the organ is stimulated to more healthy action by the use of the Homburg waters. The physicians at Homburg recognise, as a result of the over-filling of the portal system, an impeded arterial current. This interferes so much with the metamorphic processes essential to a healthy organism, that abdominal plethora ensues, causing a whole train of symptoms of faulty digestion, such as

flatulence, irregular stools, spasms, colic, headache, &c. The efforts of nature to reduce this abnormal state produce hæmorrhoids, and a radical cure of these is very frequently the result of the use of the Homburg springs.

A sluggish state of the uterine system is also greatly relieved by the spa. If stomach spasms accompany the monthly periods, a cure may certainly be predicted.

Numerous ladies are attracted to Homburg if there is a tendency to corpulence, and if this coincides, as it often does, with the cessation of the catamenia, much benefit is derived. To such patients a very rigorous diet is also prescribed. Thus butter and all fatty substances are interdicted. Coffee and rusks are taken for breakfast; roast meat, without gravy and with few vegetables, for dinner at 1 p.m. Light Rhine wine may be taken, but beer, effervescing and heavy wines, are stringently forbidden. The evening meal or supper consists of a little chicken or veal, with soup, neither fat nor spicy, and rusks.

It is not uncommon for a patient thus restricting the diet and at the same time drinking the water, to lose a stone or a stone and a half in weight in the course of the cure; and it is stated that if a moderate diet is afterwards enforced, there is no likelihood of this loss being regained.

Homburg is also favorably spoken of in curing sterility by diminishing uterine hypertrophy, but in this respect it cannot bear comparison with the rival spas of Kissingen.

The other spring at Homburg which is principally used, the Louise, has been medically employed since 1857. It contains only one third of the quantity of chloride of sodium, but it has double the proportion of iron as compared with the Elizabeth. It is singularly efficacious where iron is indicated, but cannot be taken in any artificial mixture on account of its irritating and constipating effects. Hence it is prescribed in cases of chlorosis, where there is also an accompanying low nervous fever, and it is also used very frequently as a gradual preparation of the system for the more powerful iron waters of Schwalbach.

No one with suspected tubercular deposit or with a hereditary tendency thereto, should risk even for a day the keen air of Homburg. Latent tubercle, according to the testimony of all the resident physicians, is at once quickened into activity, and a starting-point for a fatal train of symptoms may ensue. Kissingen is supposed from its sheltered situation to retard tubercular development, while Homburg stirs up, it may be, the as yet smouldering spark. The use of the water is also contra-indicated in heart disease and in persons with a tendency to apoplexy.

In the neighbourhood of Frankfort and near to Homburg there is a sanatorium at Königstein, 1800 feet above the sea level. The value of the place is heightened by its happy combination of a pine forest with the bracing mountain air. Patients are ordered to Königstein principally for phthisis, and the treatment is hydro-therapeutic, combined with a very generous diet. Alcohol is freely given to the extent

of half a bottle of brandy daily. Food is taken frequently and outdoor exercise is enjoined. The results attained by the treatment are in many cases very satisfactory, if the tubercular process is not too far advanced. The same class of cases prohibited from going to Davos Platz are also ineligible for Königstein.

A quaint old German legend tells how the natural difficulties still existing were at one time deemed sufficient to bar the course of true love, for a gay and gallant youth loved, it is told, the fair daughter of a stern chieftain, who in the olden time held the rugged fastness, and asked from him her hand in marriage. "You may marry her," said he, "when you ride from Cronbach here." The young man went away exceedingly sorrowful, for a hopeless task had been placed before him, and he knew that he could never claim the fair damsel to whom he had plighted his troth. Tears stood in his eyes as he slowly passed through the forest, when, lo! a good fairy appeared before him and asked him "the cause of his distress." To her he told his tale with all the force of impassioned and hopeless love. "At midnight," she replied, "mount your horse and I will lead you on." Faithful to the appointed hour he started, and step by step as he rode the fairy made a path with the aid of a golden wand she bore, and only left him as he thundered his impatient demand for admittance at the castle gate and claimed the maiden as his, since he had fulfilled the task set before him. The legend adds that he gained the bride he had so wondrously

won, and from that time a way has been opened to the Königstein height.

Wiesbaden

In early days pilgrims sought Wiesbaden chiefly for its baths. A few only took the waters internally. Like many other spas on the Continent its early history shows that Wiesbaden was considered good for every ailment, but as other spas sprang into notoriety the sphere of its action was limited to rheumatism. Chronic rheumatism and Wiesbaden are in the popular mind inseparably linked together.

The principal spring of Wiesbaden is the Kochbrunnen—literally "boiling well." The water is clear and colourless. Its smell is faint and its taste is by all observers likened to "weak chicken broth."

Wiesbaden is a thermal spring, the temperature of the water being 153° Fah. or 54° Reaumur. The Kochbrunnen is enclosed in an oblong quadrangle, with a depth of about five feet. The most important of the solid constituents is common salt (NaCl). It monopolises five sixths of the total quantity of solids.

There is also a trace of the chloride of potassium, chloride of lithium, chloride of ammonium, and chloride of lime.

The volume of carbonic acid is not considerable and therefore has no special significance. The high temperature does not appear to add to the value of the spring nor give it any special therapeutic effect, for

the water is drunk when cool, and even in the bath it is never used at its natural temperature.

Compared with other hot mineral springs, the chemical constituents of the Wiesbaden water are of the simplest character. It contains, as we have seen, principally or indeed only the chloride of sodium—an important constituent in digestion and forming an integral part of the composition of the blood. Other salts are notably absent. The iodides and bromides are hardly represented—at all events not in sufficient quantity to render their absorption of any use. In fact, says Koch, "the therapentic value of Wiesbaden is simply warm salt water."

As previously indicated, Wiesbaden has a high reputation in chronic rheumatism. The first symptom of improvement is removal of pain. By degrees movements become easier, and flexion ultimately occasions no uneasiness. After the pain has diminished, movement of the stiffened joint is recommended. Other signs of amendment are better appetite, improved digestion, good sleep. Swelling of bursæ early subsides. If taken in time, the painful and otherwise incurable "arthritis deformans" is said to be arrested by the Wiesbaden waters. No benefit ensues to joints, where crepitation exists, by the use of the waters.

The mode of action of the Wiesbaden waters in baths thus generally explained may now be summarised:

1. They are given at a temperature of 92·8° Fahr.
2. They increase the functional activity of the skin.

3. Soothe the nervous system without producing excitement.

4. Withdraw the blood from internal organs.

5. In suppurating wounds, they generally excite the skin and exert on the wounds an essentially antiseptic action.

VICHY

Vichy lies at the foot of the Auvergne mountains 733 feet above the sea level, in a fertile valley where vineyards and fruit trees abound. It is about twelve hours from Paris and eight from Lyons by rail.

There are six springs in Vichy, the three strongest being De l'Hôpital, Puits Chomel, Célestins. Each of these contains from 38 to 39 grains of bicarbonate of soda in 16 ounces. The temperature of De l'Hôpital is 87·8° F., Puits Chomel 109·4° F., Célestins 59° F.

The waters of Vichy are all extremely alkaline and very limpid; they derive their flavour of soapsuds from the CO_2 rising up in them.

Alkalies are indispensable to the conditions of endosmosis, combustion, digestion, and the secretions; they assist in the functions of respiration and heat formation.

"They fluidify the elements of the bile, prevent them from thickening, or forming calculi; they saponify fatty matters, maintain the intestinal digestion, facilitate the secretions and preside over the acts of nutrition and assimilation."—M. Mialhe.

Bicarbonate of soda is the chief and essential ingredient of all the springs of Vichy. Artificial

bicarbonate of soda water is weakening. It fatigues the stomach. Not so the Vichy natural water.

The reason of this is that the mineral water contains the soda salt in the form of the bicarbonate. The artificial is made with a salt not completely saturated, and mixed with neutral carbonate and sesquicarbonate.

Moreover, the varied elements of the spring, small though they are in quantity, probably have a special combination and special properties.

The Vichy waters are drunk in the morning at the springs in not too large quantities, and the effects are to increase the appetite, to render the urine more copious, to strengthen the constitution, and give physical comfort. They do not produce purgative effects.

The baths increase perspiration, re-establish former eruptions and even provoke artificial exanthemata when the immersions are too prolonged.

The urine and the perspiration may become abnormally acid by various digestive derangements. Four or five glasses daily of Vichy water and one bath, will keep the urine alkaline all the time the waters are used.

The blood is also rendered more alkaline.

Magendie and Trousseau have shown that alkalies taken in large quantities exercise an influence on the blood. It becomes more fluid, causes paleness, passive hæmorrhage, and wasting away. They say that alkalies in this way occasion as much injury as abuse of mercury.

This funereal train of symptoms is not observed at Vichy. Why? Because the internal use or abuse if

it exists is counteracted by the abundance of the secretions. The blood becomes more alkaline. It loses part of its coagulability. It acts on the albumen and the fibrin, and brings about promptly the solution of these substances. If the blood then becomes more fluid, it attacks the two principal elements which form the bases of most congestions.

The Vichy waters are contra-indicated in all acute inflammatory disorders; also in chronic inflammation with a tendency to acuteness.

They are favourable in chronic affections where a stimulus is required, they promote the circulation, and excite the secretions and further assimilation.

By their chemical properties they are suitable in all cases of congestion, obstruction of the viscera, calculi, disorders of liver, chronic cystitis, gravel, rheumatism, diabetes. Cramps in the stomach are sometimes continuous, sometimes intermitting, sometimes associated with chlorosis, the pain being situated at the xiphoid cartilage (these pains are often not increased by food); at other times chlorotic gastralgia is associated with great pain after taking food, lasting for some time. In all these disorders Vichy waters are serviceable.

How do they act in hepatic colics? By dissolving or rendering more liquid the biliary concretions. At least this is a probable explanation. However they act they facilitate the passage of gall-stones, sometimes without pain, but generally with great pain occurring at intervals.

The power of the Vichy waters in gravel and urinary

calculi has long been acknowledged. It was found by experience, that patients suffering from gravel or calculi on repairing to Vichy and taking the waters felt a sensible relief; after a few days the urine became alkaline. It was passed without pain. Instead of being black and fœtid it became limpid, while at the same time the hæmaturia and the colic disappeared. These were actual facts.

Then came theories to explain them. It was suggested that it was necessary to alkalize the urine. The solution of calculi by an alkali had been admitted from the earliest times. Thus, the shells of snails had been recommended by Pliny. "The specific of Mrs Stephens," "Saunders' potion," "Brande's solution of magnesia," and other famous potions all owed their virtues to this cause. All were mixtures made of carbonate of potash, soda, or magnesia, and it was imagined they passed into the bladder and directly attacked the calculus.

Hence, Berzelius sanctioned the injection of alkaline solutions into the bladder. "He said the best injection is a lukewarm solution of 1 part of carbonate of potash to 90 or 100 of water, to which is added some vegetable mucilage. That liquor acts on the calculi whatever be the composition of them."

Then M. Petit undertook a series of experiments, the particulars of which were summarised by the Academy of Medicine in the following manner:

1. "They act on the calculi of the urinary passages.

2. "Calculi placed directly in contact with the Vichy

waters are dissolved, and calculi in the bladder are similarly affected by the taking of the waters.

3. "This is proved by the diminution of the size of the stones as detected by inspection and by examination with the sound.

4. "If not entirely dissolved they are rendered much more susceptible of the operation of lithotrity."

Serious objections were raised to these explanations. It was said that the use of the waters would increase the deposit of phosphates of lime and magnesia in the bladder, and thus produce alternating calculi.

This has never been proved, but it has been popularly believed; and it is necessary to remember the statement that a distinct line of demarcation should be drawn between different forms of calculi, viz.:

1. Those determined by uric acid and its compounds.

2. Those which result from phosphatic deposits of lime, magnesia, or ammonia forming binary or tertiary combinations.

The first form depends on the uric acid diathesis, when the urine presents its natural colour, and is limpid and more or less acid. In this form the Vichy waters neutralize the uric acid diathesis and prevent it manifesting itself.

In the second form, to which the name "white gravel" has been applied, the urine is more muddy, fœtid, discoloured, with deposits of phosphates. Here the urine is neutral or alkaline. It is affirmed that Vichy water introduced into alkaline urine in a vessel without the addition of ammonia causes no precipitate,

and the same thing is supposed to take place when it is taken internally. The ammonia in the latter case is formed in the bladder, not in the kidney, and thus disappears by the favourable action of the alkaline water on the impaired tissues of the bladder.

The Vichy waters are therefore proper for all calculous affections of the urinary organs. They modify the pathological state of the mucous membrane of the bladder, liquefy the mucus secreted, and in thus acting on the composition of the blood, by preventing the formation of uric acid or neutral phosphates, change the constitution of the urinary principles so that when they arrive at the kidneys or bladder they no longer contain any insoluble substances to form precipitates.

Like Carlsbad, the Vichy waters have long had a great reputation in diabetes.

HEALTH-RESORTS IN HIGH ALTITUDES

Davos Platz

From various considerations this place has within recent years become famous as a health-resort in phthisis, and its popularity, as present statistics show, is decidedly on the increase. Upwards of 1300 invalids winter at Davos, the majority of whom are British, and this fact cannot be ignored by those who on theoretical grounds undervalue its curative properties in tubercular diseases.

Davos is reached from England most directly viâ London and Brussels and Brussels and Basle; from Basle to Zurich and from Zurich to Ragatz. The above journey is by rail and sea; after Ragatz is reached the passenger is conveyed by diligence to Davos and arrives there as a rule in the evening of the third day from London. In darkness, therefore, the visitor reaches the place, and on entering the Kurhaus and principal hôtel he is impressed with the strong odour of carbolic acid, which brings to the recollection of a medical man a surgical ward in a

large hospital. The rooms are found, especially the bedrooms, to be large and comfortable and protected by double shutters on the windows from any draught. The doors are also padded, and an even temperature of 65° Fahr. is maintained at all hours throughout the house.

The valley in which Davos lies is about four miles long, and is sheltered from the cold blasts which sweep keenly down most of the other Alpine health-resorts during winter, and render them cold and unpropitious to residents or travellers. In winter Davos has an atmosphere still and cold, undisturbed by gusty wind or snowdrift. The snow generally falls early in November to the depth of two or three feet, and so remains crisp and clear and glistening until it is melted by the April sun.

From ten to four in the Davos season, *i.e.* from the middle of October to the end of March, patients may remain out of doors and bask in a sunshine which is sometimes as warm as midsummer at home. Those who improve in health are sunburnt and swarthy in the early spring when they leave the place for more southern retreats. With April the snow melts, and the slushiness under foot, with the moisture of the atmosphere, necessarily prevent a longer healthy residence.

After 4 p.m. in the winter, patients leave the open air and return to the recreation-rooms of the different hotels. Here the difficult part of the cure begins, for it is hard to restrain those who are young and probably recovering, from the amusements peculiar to

youth and health. Dancing is, however, strictly forbidden, the unnatural heat occasioned by this exercise interfering very decidedly with the hygienic factors so necessary in tubercular complaints.

At the Kurhaus, there is a spacious recreation-room where amateur theatricals and concerts are given in the evening. The ventilation of this room is seemingly perfect, and so also is that of the smoking-room, which can accommodate about 200 people, and where the smoke of the cigar seems magically to disappear and leave no smell in the building. Hence ladies can easily enjoy a seat in the room, and gossip over their work with the other sex, when the open-air exercise is interdicted.

Close by the Kurhaus, there is an easy ascent through pine-wood shade to the summit of a mountain 1000 feet higher than Davos itself. Numerous seats are placed at carefully selected intervals, and the walk, either to a greater or less extent up the mountain, forms one of the daily winter exercises of the invalids. Some rest by the way, others ascend without fatigue or halt to the top, and the progress of the cure may be roughly estimated by the ease or the reverse with which the task is accomplished.

During the season of 1881 and 1882 there was at Davos a clear unclouded sky from the beginning of November to the end of March, and though this was an exceptionally favourable climatic period, it is certain from the records of the place, that nearly five months of unbroken weather annually can as a rule be relied on. This time is considered sufficient to effect

a considerable improvement if not actual cure in those who are fit for the high Davos air.

But all are not fit, and the pæans formerly sung about its wonderful success in all cases of phthisis have not been borne out by the experience of years. All are not benefited by Davos, nay, it is certain many are decidedly injured by a sojourn there. It is a comparatively easy thing, as hospital and individual testimony shows, to decide as to the salutary or retrograde condition of the victim of phthisis. For there are two great and prominent indications which may be summed up in the following inquiries :

Does the weight increase and does the temperature fall ? If these two conditions are fulfilled, we may safely argue that the disease has been arrested, and there is a possibility with care of a return to fair health. If they are not, then undoubtedly there is no cessation of the malady. We have no tests, in my opinion, so sure and satisfactory as these, and by careful observation and record of these facts of weight and temperature should every case of phthisis be judged. For phthisis is a wasting disease, be its origin bacillus or not. It thins, it attenuates, it weakens, and the factor in this thinning, attenuation, and weakness is evidenced by the pyrexia—the fever heat.

If we take an ordinary case of phthisis we find the temperature in the early stage to be, say 98·5° F. a.m., 99° F. to 100° F. p.m. If we take a later stage we find the temperature at the same periods 98·5° F. a.m., 101° F. or 102° F. p.m. Are two patients with such

differences of temperature equally eligible for a mountain residence? Most distinctly and decidedly not. The former is certainly a proper case for the mountain air, the latter is not, and for him or her a soft and mild atmosphere like Cannes or Pau will be more beneficial.

These facts are known to the physicians at Davos, and I observe in a recent article in the 'British Medical Journal,' by Dr Peters, a general confirmation of what has been stated. This experience is confirmed by Dr Spengler, resident physician at Davos since 1862.

Briefly and temperately expressed these gentlemen unite in saying: "Let the young man or woman on whom the hereditary taint of phthisis rests spend, if possible, a month or two at Davos, so that when the constitution is forming, he or she may inhale a pure air and may expand the lungs and increase in bodily vigour."

In the early or catarrhal stage of phthisis it also is stated, when the apex of one lung is alone affected, that good undoubtedly results unless the patient is of an excitable or what is termed "erethic" constitution, for the air is then too keen and "rapid" and "galloping phthisis" may ensue.

Davos is also beneficial in cases of pleurisy where some adhesions may have occurred, and where the local irritation so excited may ultimately give rise to tubercles. This, it is stated, is prevented by the high altitude and the freedom from bad hygienic surroundings.

Contrary also to what may be generally supposed, it is found that hæmoptysis is not engendered by the Davos atmosphere, and that those patients who may have expectorated blood at home do not do so at Davos, *i.e.* if they are sent there in the first stage of the disease. On the other hand, the melancholy fact is mentioned, that out of five fatal cases of hæmorrhage, three of those attacked died within a few days of their arrival at Davos, but the phthisis was far advanced and had even reached the third stage before they had been advised to leave home. Surely, these are warning examples to rash or ignorant advisers, unacquainted with the dangers of a long journey and the stimulating nature of a pure, cold, and keen air, bidding them hesitate before recommending a phthisical patient to try Davos.

Better far, in such a case is it to allow the patient to linger at home, among relatives and friends and wait quietly and gently for the end.

Meran

Meran is the old capital of the Tyrol, and is reached from the Lower Engadine (Tarasp) in seventeen hours by the diligence. An easier method, however, is from Innsbruck by rail to Botzen and then to Meran.

Meran is a place little known to English tourists, and still less frequented by English invalids. Yet few spots present more admirable natural advantages, and it cannot be doubted that ere long Meran will

occupy, as it ought to do, a foremost place in health-resorts known to English physicians. The approach to the town through the charming valley of the Funster is exceedingly beautiful in early autumn. On each side of the road stretch orchard upon orchard and vineyard on vineyard. In the former apples cluster in rare abundance on every tree, and each apple seems to have been specially reddened by the rays of the sun. In the latter vines are placed on trellis frames, and the luscious fruit hangs in tempting bunches within easy reach of the passers by. Beneath the frames lie melons, yellow and ripe, and here and there the cactus and other tropical plants show the wonderful geniality and mildness of the southern Tyrol air. At short distances from the road farm-houses, villas, and old castles divide the orchards and vineyards, and cover the gentle and undulating slope of the lofty mountains encircling the town except in its southern aspect, which is open to the unbroken and uninterrupted sunshine. Meran thus lies in a valley, a valley strangely sheltered from cold wind or unpropitious weather change. As a climatic health resort I think it stands unrivalled, and meteorological observations show, that during the four cold months of the last ten years, there has been only occasionally noted a single windy day. The climate is thus in the winter uniform, and Meran is said last year to have had fifty-five cloudless days from November to March, with no frost and no snow.

Dry, therefore, and temperate, it affords rare advantages for invalids, who can spend several hours

in the open air during the day, and are not harassed, as at Davos, by the extreme cold of the night.

The town itself is by no means large, in all 3000 inhabitants, but its rising popularity as a health-resort has led to the erection of excellent hotels and beautiful villas, where all necessary accommodation and attention are given to invalids.

The Kurhaus is situated by the side of the river, and possesses reception-rooms, dining-rooms, reading-rooms, and all the other accessories of a first-class establishment. There is also a complete pneumatic apparatus chamber, and baths of all kinds can be obtained with the services of experienced attendants.

To assist its undoubted climatic advantages there are also certain agencies peculiar to Meran. Early in September, generally on the 5th, visitors are attracted from other health-resorts where the season is over, and having reached Meran commence the "grape cure."

The grapes of Meran are "sui generis." They are not sweet and they are not sour, but present a happy combination of these two qualities most agreeable to the palate and pleasant to the stomach. Early in the morning, as a rule at 7.30, visitors emerge from their hotels and lodgings and purchase from shops and itinerant vendors three to four pounds of grapes for about threepence in our money, and wander about slowly taking the delightful remedy. A light breakfast is then partaken of, consisting usually of a cup of coffee or tea with some dry toast or rusks.

The effect of the grapes so taken is aperient, and it

is said that four or five weeks of the "grape eure" will, as at Marienbad and Tarasp, reduee obesity to a great extent.

On the other hand, eonsumptives are ordered grapes to inerease weight, and it seems elear that weight is increased when the grapes are regularly taken. They are in sueh eases ordered not in the early morning, but after breakfast and up till noon, and the quantity consumed should not exeeed one pound per day. It is also reeommended to eat them very slowly.

The prineiple of the "grape eure" is this: The grapes are rieh in sugar, eontaining as much as two and a half to four ounces in sixteen ounees of grape juice. They thus tend to favour the accumulation of fat, and by so doing are direet antagonists to wasting the marked feature of phthisis. In a similar manner eod-liver oil has obtained world-wide notoriety, and the advoeates of the grape triumphantly exclaim, Is not the one eure much more pleasant than the other?

Grapes, at least Meran grapes, are said not to nauseate, but, in faet, to inerease the appetite, while they strengthen the general health and tone. At first consumptives may feel a sense of fulness in the epigastrium after partaking of grapes, and this is followed by quiekening of the pulse, giddiness, and perspiration, with inereased seeretion of urine and loose evaeuations. These symptoms are, however, easily remedied by antaeid medicines, and the inerease of weight is marked in properly seleeted eases.

The grape eure is certainly a very pleasant one, and

its popularity is attested by the growing number of invalids who yearly eome to Meran.

In the spring phthisieal invalids are ordered goats' whey, and this is stated to have a specially benefieial effeet when there is mueh cough and laryngeal irritation. The whey should be taken at a temperature of 105° F., the patients walking about and sipping it, and the quantity drunk should not be less than half a quart per day. Two to three quarts are the largest quantities ordered. The whey is taken in the early morning, followed by breakfast after a eonsiderable interval.

Tarasp

Tarasp stands in the Lower Engadine, and is easily reached in a day's journey from Davos or St Moritz. It has an altitude of fully 4000 feet, and presents rare advantages for invalids of another elass.

Here, in the valley of the Lower Engadine and within a stone's throw of the headlong, foaming rush of the white and noisy Inn, there is a "eold Carlsbad." By no better term can it be remembered in regard to its therapeutic value in disease. For it eontains the same ingredients eombined with earbonie aeid, but unlike the ancient bubbling sprudel of Bohemia it laeks the heat of a volcanic origin and its waters are consequently eold. No dim legend of the far past, no saintly blessing of a mediæval age, lingers around its sweet and lowly source.

In quiet solitude, covered by a neat verandah and close to the edge of the Inn, its waters are ladled out from six to eight in the morning and are slowly drunk by those who have been recommended to use them.

On the ante-chamber of the Rotunda is written in German :

"The mountain air with healing fraught,
A spring that strength doth give,
Combined renew both life and health;
So breathe and drink and live."

On the wall behind this is the Latin inscription :

"Aere, sale, salus aerea."

Above the spa, 800 feet, by a pleasant winding path, is entered the village of Vulpera, from which a good view can be obtained of Tarasp and its surroundings and a fair idea may be gained of the natural climatic hygienic advantages it possesses.

The spa is then seen to be situated in a hollow and the Kurhaus on the opposite side of the river, with no great architectural beauty but with a fair lawn and a broad level sweep reaching to the riverside, is by some travellers not inaptly said to rest "in a hole." No doubt the Kurhaus might have been more artistically placed for altitude and prospect, but these advantages, to those who founded it, were dwarfed by the desire of having a sanatorium near to the spa where its waters might be more easily conveyed for bathing and curative purposes.

In the Kurhaus from 200 to 300 visitors are accom-

modated during the Tarasp season, which lasts only from the beginning of June to the end of August. After that time Tarasp is forsaken by visitors, when the snow and the sleet and the rain beat pitilessly down and bar all but diligence access to the place.

Hence it is the short season at Tarasp is busily utilised. Those who for expense or other reasons do not care to stay at the Kurhaus, can have clean and comfortable rooms at Vulpera and Schuls, but all must be prepared, if they wish benefit to ensue, to rise with the morning sun at 6 a.m. to drink the pleasant beverage of the spa.

The water has no unpleasant taste. When heated it is a grateful draught, and the offended stomach, even at this early hour mentioned, in no way rebels against the pleasing tribute to its digestive force.

Three tumblers as a rule are taken with an interval of twenty minutes during which brisk walking exercise is enjoined, and then, preceding or following a light breakfast, there is a copious and painless stool.

A bath about 11 a.m. completes the therapeutic *régime* of Tarasp and dinner is usually taken at one.

The repast is light and after it there is no dallying with coffee or cigars. The motto is "Excelsior."

Upwards through the forest glade and beyond the green sward, following the footpath, twisting round by hamlet and cornfield, upwards to the mountain range which looks sternly down on the struggling wayfarers and beckons them to its glacier home.

Not that many reach this in an afternoon saunter, but yet they venture upwards, far beyond Tarasp and

its surroundings, and are charmed by a scene of rare and splendid beauty. He, who lingers thus until the God of day descends to his rest, will be rewarded by the glory that attends the "Alpen-Gluth," a term alone applied to such a sunset. Then the mountains are supposed to unbend from their dignified and rigid repose; and as the sun rests now here, now there, and its rosy gleam is thrown over their snowy mantles, it is no unapt simile to say that they are taking like children their evening bath.

It may naturally be supposed that Tarasp is suitable for other patients than Davos or Meran. It is not recommended for phthisical patients nor for those afflicted with chest or heart complaints, but for the victims of indigestion, bilious, and nervous disorders. There it is that men "overworked," with whom nothing seems to agree, whose whole system rebels against the routine of daily existence at home, benefit and improve under the Tarasp air and the Tarasp waters.

There it is also that the gouty or hypochondriac feel their real or fancied affections disappear, and learn that the "mens sana in corpore sano" can only be retained when the Primæ Viæ are well unloaded and the appetite is not whetted by rich viands or costly wines. Recovery from acute disease is also wonderfully hastened, and even chronic and lingering maladies assume a new and better type when the Tarasp waters are taken.

There, I saw a young merchant from India arrive a shadow of what he must have been, exhausted with chronic dysentery, the result of an acute attack

contracted a year previously in the East. He had tried everything, and everything seemed to have failed. As a last resource he came to Tarasp and the improvement effected was very manifest. The gentle aperient nature of the water rendered the stools bland and unirritating, and favoured the healing of the intestinal ulcers, while the mountain air gave strength and tone to the system. In a few weeks he was decidedly convalescent, and it is scarcely possible to conceive any remedy which would at home have acted so speedily and effectually.

In concluding this subject I would like to draw attention to the connection between

High Altitudes and Sleep

I have not observed any notice taken in the numerous Swiss guide books of the remarkable influence the mountain air has upon sleep, but it is an undoubted fact that such an influence exists. If you ascend the Rigi-Kulm, a height of 5500 feet, with the object of seeing the sunrise at 4 a.m., you may fancy that the restless dreaming sleep you snatched was due to the eager wish to awaken early in the morning, and you may think nothing of the occurrence. But go from Rigi-Kulm to The Engadine, and let St Moritz, Pontresina, or Tarasp be your residence for a few weeks, and the sleepless nights will shortly force themselves on your attention. To 70 per cent. of visitors to these high altitudes there is for a week a

succession of nights of painful nervous excitement. You sleep perhaps at first for an hour soundly, and then comes a period of half sleeping, half waking, in which to the slumberer's fancy strange and weird shapes and scenes appear.

A learned dignitary of a Scotch University told me when I spoke to him on the subject "that he had had a horrible night, and that he was engaged for many hours in a fierce effort to make a Latin oration for a University meeting, but he could not recall a single Latin term when he faced his audience."

The other sex are not more gently visited, for the wife of a professor of the Berlin University endured womanly agonies by fancying "that many guests had come to her house, but not a thing could be found wherewith they might be entertained."

This restless, sleepless feeling, however, passes off after a week at most. The active exercise entailed by constant pedestrian excursions necessitates in the evening physical fatigue, and with it the desire for repose. As the result, there is a dreamless sleep and buoyancy and exhilaration of spirits when awakening at the early morning hour. Tired brain workers thus find a good anodyne, and wearied men of business, forgetful of banks or bills, rest awhile from the struggle in the great race for wealth.

Andermatt.

Lucerne is well known to the Swiss tourist as being a midway resting place between England and Italy. A charming lake, a quaint old city with memories of the past, add to the natural beauty of the place, while the wide, open streets, and elegant hotels ensure the traveller fresh air and excellent accommodation.

From Lucerne proceeds the well known St Gothard route, which is a delightful piece of railway travelling and a triumph of engineering skill. Upwards, by rich meadows, by luxurious orchards, by castled crags, by mountains tipped with the eternal snow, and villages nestling in level sward, the train hurries at an express rate. It dips into tunnels dark as midnight and emerges on a smiling and joyous scene. After two hours it reaches Göschenen, and a diligence from the station takes the traveller to Andermatt. The road is steep and the progress somewhat slow, but at length the top is reached and Andermatt is exposed to view. The diligence rests for a few minutes at the "Devil's Bridge," where the Reuss has concentrated its waters to a narrow gorge, down which the river rushes with foaming speed, and plunges over a cataract, from which a blinding spray rises to the onlooker's eyes. The bridge is called "The Devil's Bridge," and on the bare, bald rock overhanging the cataract this personage is represented with his trident and spade, his tail and shovel, and lamp lighted. A sense of awe creeps over the beholder as he looks on this picture,

with the rock and the mist, and the demon, and he turns with pleasure to the broad meadow, where, within a quarter of a mile of the bridge, Andermatt rests, encircled by mountains. The situation is peculiarly sheltered, and meteorological statistics show that the rainfall is even less than at Davos Platz. The large expanse of the surroundings of Andermatt takes away the cramped feeling engendered by Davos, and the sensation imparted to the frame is that of intense freedom and unwonted activity. Within easy walking distance is the famous Rhone glazier.

The hotel and lodging accommodation are good and cheap, and various advantages are held out to visitors who may wish to make it a winter resort. Its growing popularity renders it a formidable rival to Davos, and it has this great point in its favour, that the plateau on which it is situated is so large, as to give almost unlimited scope for buildings being erected without the risk of overcrowding.

SEA VOYAGES

No satisfactory physiological theory accounts for seasickness, and no treatment adequately ensures immunity from it. Hence the fact remains that many people cannot stand the motion of a ship, without becoming seasick for a variable length of time. This is evidenced in most cases by vomiting and depression. Occasionally these symptoms are attended with great exhaustion and collapse.

If, therefore, a physician doubts in any way the fitness of a patient to stand a sea voyage, he ought, in the first instance, to make him take a short trip by sea. Supposing that the trial is favourable, then comes the question in what class of diseases is a longer voyage advisable, and in what others might it be hurtful.

I would say it is very advisable in phthisis, but the same precautions must be taken as were mentioned under Health-Resorts in high altitudes, before a phthisical patient should be recommended to leave home and its comforts. Persons in the later stages of phthisis will invariably, however hopefully they may try the experiment, get worse by sea air, and a fatal issue may be hastened. On the other hand, if there is no hæmoptysis, no great difference in the morning and evening temperature, if the physical

signs only reveal the early stages of "bacillary phthisis" or "fibroid phthisis," then in such cases a sea voyage may be suggested with the expectation of its being attended with favourable results.

The voyage recommended should not be short if permanent improvement is expected. It should last six months, and preference in most cases should be given to a sailing ship over a steamer, for the motion of the former is less, and there are no untoward symptoms occasioned by the bad smells sometimes developed in the latter. The ship chosen should be one from England to Melbourne or New Zealand, and afterwards coming direct home. The voyage should be undertaken at the end of September, so that the winter and spring months of this country may be avoided, and the return of the invalid may be with weather warm and genial. If the ship selected is likely to have many passengers, amusement and social intercourse will make the time pass pleasantly. If, on the other hand, the passengers should be few, a collection of amusing and entertaining books should be taken. The neglect of this often leads to great weariness, and the routine of ship life is found to be irksome. A phthisical patient, whose health improves at sea will discern this by the better appetite he possesses and the attendant increase of weight. He rarely finds the sea diet, though somewhat unvaried, pall on him, and he enjoys the plain fare with a zest he could not feel for delicacies on shore.

Digestion generally waits on appetite, and little if any medicine is required. Should there be slight

constipation a small quantity of an effervescing saline mixture may be given in the morning, and if biliousness also exists, this draught may be preceded in the previous evening by twenty drops of the tincture of podophyllin, representing about one quarter of a grain of the resin.

Daily exercise should be enjoined. A pedometer is useful to mark the actual amount of mileage done, which, weather permitting, should never be less than nine or ten miles, divided over the day. Thus two miles before breakfast, three before luncheon, three before dinner, and two before turning in at night.

Wealthy patients are stated to find a trip with the therapeutic steam yacht "Ceylon" very enjoyable, and doubtless from the nature of the voyage they will have comforts and luxuries which they could not obtain in an ordinary sailing ship or steamer. The "Ceylon" is specially fitted out for invalids, who require a change and a warm climate during the winter months.

Nervous Disorders.

A dipsomaniac may be fully cured by a sea voyage in a thoroughly temperance ship, and in many cases no after temptation will shake his resolutions for the future to avoid intoxicating liquors. Locomotor ataxy in its early stage is also improved. The sleepless and wearied man, professional or mercantile, will find in a voyage great benefit after he has become accustomed to the routine imposed by sea life. The absence of telegrams and newspapers and letters,

and the thorough enforced rest so resulting, are evinced by restored health, mental and bodily. A new physique seems to be acquired, and with care afterwards, health may be retained to a green old age.

Cases which should not be sent to sea are those of advanced consumption, unconquerable seasickness, heart disease, enlargement of liver, epilepsy, and where there is a tendency to hæmoptysis from heart or lung disease.

For seasickness various remedies have been tried. My experience leads me to recommend the night before embarkation a pill (of podophyllin a quarter of a grain, mercurial pill two grains, and extract of colocynth one grain), followed by a black draught or a seidlitz powder in the morning.

The recumbent position is advised for a few hours after the ship starts; after that it is necessary to be on deck as much as possible. For sickness with vomiting, iced champagne is the best remedy, taken at intervals of two hours with dry toast or biscuit. A tight flannel bandage round the abdomen is very useful. The following mixture is recommended:

℞ Ol. Aurantii
Ol. Cassiæ
Ol. Anisi
Ol. Carui, āā ♏j
Spt. Vini Rect. ʒj
Syr. Simplicis, ʒij
Sacch. Usti, q. s. M.
Take of above mixture ʒij,
And add Potass. Bromid. gr. 320
Aquæ ad ʒiv. M.

A dessert-spoonful represents gr. xx of Pot. Bromide, and may be taken the first two nights of the voyage, and occasionally afterwards if there is sleeplessness. This mixture completely disguises the salt taste of Pot. Bromide, and can be retained by the stomach, probably made irritable by seasickness. I am indebted for the combination suggested to Mr. Wyeth, of Philadelphia.

TABLE FOR CHANGING THERMOMETRIC SCALES

	Celsius or Centigrade.	Réaumur.	Fahrenheit.	
	−20° ...	−16° ...	− 4°	
	−10 ...	− 8 ...	+ 14	
Freezing	− 0 ...	− 0 ...	+ 32	
	+10 ...	+ 8 ...	+ 50	
	+20 ...	+16 ...	+ 68	
	+30 ...	+24 ...	+ 86	
	+40 ...	+32 ...	+104	
	+50° ...	+40° ...	+122°	
	+60 ...	+48 ...	+140	
	+70 ...	+56 ...	+158	
	+80 ...	+64 ...	+176	
	+90 ...	+72 ...	+194	
	+100 ...	+80 ...	+212	Boiling point.

In the Centigrade (or Celsian) and Réaumur scales the freezing point of water is taken as zero, and the distance from this to the boiling point of water is divided into 100 degrees in the former and 80 degrees in the latter scale. Fahrenheit's scale begins at 32 degrees below the freezing point of water, and from the latter point (32° F.) to the boiling point of water (212° F.) the scale is divided into 180 degrees. Degrees Fahrenheit, Centigrade, and Réaumur, thus

bear to each other the proportion 180 : 100 : 80 = 9 : 5 : 4; but in calculating, the extra 32 degrees of Fahrenheit's scale must be kept in mind, and must first be subtracted in converting F. into C. or R., and added, after multiplying and dividing, in converting C. or R. into F. The rules will, therefore, stand thus: To convert degrees F. into C. first subtract 32 degrees and then multiply by 5 and divide by 9; to convert degrees F. into R., subtract 32 degrees, multiply by 4 and divide by 9; to convert R. or C. into F., multiply by 9, divide by 4 in the former case, by 5 in the latter case, and add 32 degrees. Examples:

Reduce 98·4° F. to degrees C.

98·4° − 32 = 66·4°
66·4° × 5 = 332°
332° ÷ 9 = 36·8° C.

Convert 39·5° C. into degrees F.

39·5° × 9 = 355·5°
355·5° ÷ 5 = 71·1°
71·1° + 32 = 103·1° F.

Convert 24° R. into degrees F.

24° × 9 = 216°
216° ÷ 4 = 54°
54° + 32 = 86° F.

Convert—16° R. into degrees F.

−16° × 9 = −144°
−144° ÷ 4 = −36°
−36° + 32 = −4° F.

From these examples the following formulæ will be understood:

Fahrenheit to Centigrade $\frac{5}{9}$ (F.°−32) = C.°
Centigrade to Fahrenheit $\frac{9}{5}$ C.° + 32 = F.°
Réamur to Fahrenheit $\frac{9}{4}$ R.° + 32 = F.°

ALPHABETICAL LIST OF HEALTH-RESORTS.

Aix-les-Bains.—Altitude 850 feet. In the south of France, eight miles north of Chambery, sulphur and alum springs. The situation is charming, the climate mild; recommended for gout and rheumatism. Season principally summer. Lord Malmesbury says in his 'Memoirs,' "Famous baths, 29° R., yet goldfish live in them."

Aix-la-Chapelle (Aachen), one hour from Cologne, has hot sulphurous springs, the chief of which is the Kaiserquelle. The analysis of this shows 31·9 grains of solid, and 26½ cubic inches of gaseous constituents in 16 ounces. Aix-la-Chapelle is a gloomy residence and contrasts greatly with the former place mentioned. Its waters and baths have, however, wonderful efficacy, especially in syphilis. Some people at home cannot take mercury without grievous injury to the constitution; at Aix-la-Chapelle mercury can be rubbed into the skin or taken internally without danger. This is doubtless due to the effects of the sulphur springs in some way modifying the action of mercury. Many cures have thus been effected and renewed vitality given to constitutions seemingly broken down before this spa was tried. The waters are also useful but to a less degree in chronic rheumatism and gout.

Alexandersbad (in Bavaria).—Altitude 1754 feet.

Mud and pine baths and cold bathing establishments. Season May to October. At Wunsiedel, a quarter of a mile from Alexandersbad, there is an iron spring and hydropathic establishment.

Ajaccio (Corsica).—A winter climatic resort for phthisical patients.

Alexisbad (in Anhalt-Bernberg, in the Harz mountains).—Iron spring containing chiefly sulphate of iron. The internal use of iron is combined with excellent steel baths. There are also mud and pine baths, and milk-and-whey cure.

Alt-Haide.—Altitude 4800 feet. A hot spring with alkaline and iron water, 1½ miles from Glatz Railway Station. A climatic summer resort for consumptive patients.

Altwasser (a village of Prussian Silesia).—Thirty-five miles west of Breslau. Altitude 1255 feet; situated in a beautiful valley; climate mild but bracing. Water alkaline earthy, chalybeate, used for drinking and baths.

Amélie-les-Bains.—A French sulphur spring in the Pyrenees (20° to 33° R.), recommended for chronic catarrh of the respiratory mucous membrane.

America.—The Peruvian Andes, and the Rocky Mountains of the United States, have lately been prominently brought forward, as presenting an endless variety of mountain climates. The altitude is in some places, as at Huancayo, 8,500 to 10,500 feet, and the annual range of temperature in the shade may be taken at 8° or 9° to 14° Réaumur. The sky is described as being always clear and sunny, the atmosphere pure

and bracing. Outdoor exercise and enjoyment are thus invited. Manitou Springs (6,515 feet) and Colorado Springs (6,775 feet) and Denver (about 5000 feet) are the best known health localities in the Rocky Mountains.

St Andreasberg (in the Harz mountains).—A climatic resort for chest complaints. There are also pine and aromatic baths. Milk-and-whey cure, pneumatic apparatus.

Æsculap (Hungary).—A palatable aperient water, containing sulphates of soda and magnesia with chloride of sodium and bicarbonate of soda; sold in England.

Apenrade (Schleswig Holstein).—A Baltic seaside resort, with cold and warm salt-water baths. The railway connection is by Richtungen and by steamers from Alsen and Flensberg.

Apollinaris (in Rhenish Prussia).—Six miles from Remagen. The fabled source of this "queen of table waters" when visited resolves itself into a very dim room in a brick building with no architectural display. The amount of CO_2 contained in the water is seen by its rapidly extinguishing a lighted paper when thrown down from the stair adjoining the bath spring. Apollinaris is much used in England and is serviceable in chronic catarrh of the bladder and in the uric acid diathesis.

Arco (Tyrol near Riva).—A climatic health-resort having grape, and milk-and-whey cures. Railway station, Mori.

Asia.—In the Himalayas, there are health-resorts

at heights varying, from 4,000 to 8,000 feet. Contradictory accounts are given as to their value, for they do not possess a dry but a moist atmosphere. Enormous masses of water surround the bases of the mountains on the southern slopes, and these lead to winds saturated with vapour, which is deposited as rain on reaching the cold mountain ranges. The northern slopes of the Himalayas are said to be drier and cooler. Thibet (9,000 to 11,000) and Cashmere (5,000 to 6,000 feet) are supposed to have healthy climates.

Aussee.—Three leagues to the south-east of Ischl. This spa is stated to make good saline baths. Season May to October.

Baden.—Forty minutes from Vienna by the Southern Railway. Altitude 638 feet. The ancient "Thermæ Cetiæ." Saline and sulphur springs from 22° to 29° R. Good for skin diseases. Bracing air with changeable temperature.

Baden-Baden.—Altitude 616 feet. In the province of Baden. Head of the Black Forest. Amid charming scenery. Season May to October. Simple saline boiling spring from 37° to 54° R. Baths used for rheumatism and paralysis.

Baden (Canton Aargau, Switzerland).—Altitude 1179 feet. Alkaline, saline, thermal springs (37° to 40° R.). Season May to October.

Bath (Somersetshire, England).—Altitude 95 feet. A hot saline spring, with good bathing establishments, recommended for rheumatism and gout.

Bagnères-de-Bigorre (Vicus aquensis).—France,

Pyrénées. Altitude 1900 feet. An earthy spa (25°—41°R.). Also climatic health-resort. Railway station, Arzt.

Biarritz (near Bayonne, west coast of France.)—A famous sea-bathing place, with beautiful scenery and genial climate.

Bilin (Bohemia, near Teplitz).—Altitude 645 feet. A cold alkaline spa. Season May to September.

Bonnes.—A sulphur spring in the Basses Pyrénées, 2000 feet above the sea level. Bracing climate.

Bocklet.—Altitude 620 feet. A chalybeate sulphur spring four miles from Kissingen. Celebrated for the cure of various female diseases.

Boulogne.—A well-known French sea-bathing place. There is also an iron spring.

Boppard (on the Rhine).—A climatic resort in summer, approached either by Rhine steamer or railway from Cologne or Frankfort.

Bormio (in Italy).—Altitude 3900 feet. A lukewarm sulphur spring 34°—41° C. Mud baths.

Bourboule les Bains (France).—Altitude 2790 feet. Warm arsenical mineral springs.

Bournemouth (Hampshire, England).—A town lying in a sheltered valley. Climatic health-resort, celebrated for the treatment of pulmonary diseases.

Botzen (in the Tyrol).—A climatic winter health-resort.

Brighton.—A famous English sea-bathing place one hour by rail from London. There is a slightly chalybeate spa containing 1 grain iron in 20 oz. of water, with CO_2.

Brückenau (Bavaria).—Altitude 915 feet. A hot spring containing iron.

Brunnthal (Bavaria).—Twenty minutes from Munich by rail; has dietetic and hydropathic health-resorts. Turkish and steam baths.

Buda-Pesth or Ofen (the capital of Hungary).—Altitude 461 feet. Contains alkaline and sulphur springs from 35° to 48° R. Has five large bathing establishments. Central depôt for "Bitter Hungarian Aperient Waters."

Burtscheid (Prussia, near to Aix-la-Chapelle).—Warm springs. The sulphurous springs are used for drinking at 46° R. Bathing establishments at Carlsbad 54° R.; Mühlenbad Quelle 62° R., the hottest spring in Germany.

Buxton (Derbyshire, England).—Altitude 900 feet. Temperature of water 82° F. A gallon contains about 19½ grains of solid constituents (carbonates of lime and magnesia, sulphate of lime, chlorides of sodium and potassium, with nitrogen and carbonic acid gas). Recommended for its baths in gout and rheumatism.

Buzias (Hungary).—A chalybeate spring.

Cannes (South of France, on the coast of the Mediterranean).—A well-known winter health-resort, especially in pulmonary complaints. The climate is milder than that of Nice, less humid and relaxing than that of Pau.

Cannstadt (Würtemberg).—Four miles from Stuttgart. A ferruginous and saline spring (15° R.). Waters are used for bathing and drinking purposes.

Carlsrühe (Prussia).—Pine and mud baths.

Cauterets (Freneh, "Hautes Pyrénées).—A climatic health-resort, 3250 feet above sea level. Hot sulphur springs, 14 in number (24° to 45° R.). Good for skin diseases, serofula, and rheumatism.

Churwalden (Switzerland).—One hour from Chur. A elimatie health-resort.

Cleve (Prussia, Rhine Provinee).—Ferruginous springs. Exeellent baths for nervous diseases.

Contrexéville.—Altitude 1000 feet. Freneh Department of Vosges; on the Paris and Strasburg Railway. A first-elass earthy spring with iron. The waters of Contrexéville are useful in irritability and eatarrh of the bladder. They are imported to England.

Cudowa (Prussian Schleswig).—Hot iron and soda spring.

Cuxhaven (at the mouth of the Elbe).—A well-known seaside resort on the North German Ocean. Season June to September.

Davos Platz (Canton Grisons, Switzerland).—5140 feet above sea level. A well-known mountain health-resort for eonsumptive and nervous patients.

Dieppe.—A Freneh seaport on the Normandy eoast. Excellent faeilities for sea-bathing.

Dievenow.—A seaside resort in Pomerania. Season June to Oetober.

Driburg (Westphalia).—Altitude 583 feet. A first-class saline and iron spring ($8\frac{3}{4}$° R.). Contains 40 grains in 16 ounees, ehiefly biearbonate of lime, sulphates of lime, magnesia, soda, 17 grains of earbonie acid, trace of iron; also sulphurated mud baths. Whey eure.

Eaux-Bonnes.—See Bonnes.

Eaux-Chaudes.—French Department Basses Pyrénées, near Pau. Sulphur springs (21°—27° R.). Recommended in chronic rheumatism and neuralgia.

Eilsen.—Eight leagues north of Pyrmont. Altitude 250 feet. Waters sulphurous, similar to Nenndorf in Electoral Hesse; sulphate of lime principal ingredient.

Elster.—Alkaline sulphated iron springs. Whey cure. On the Leipzig Eger Railway.

Ems (Nassau).—On the River Lahn; altitude 291 feet; has a muriated alkaline spring (22°—38° R.). The saline inhalations are famous for laryngeal complaints, while the iron springs seem effectual in various female disorders.

Engelberg (Switzerland, Canton Unterwalden).—A climatic summer health-resort, 3180 feet above the sea level. Railway station Lucerne.

Enghien (Paris).—Altitude 52 feet. A valuable sulphurous water. Season from May to October. Imported.

Fachingen (Nassau, on the Lahn).—Saline spring useful in stomach and kidney disease.

Flinsberg (Prussia).—A climatic health-resort with iron springs and bathing establishment.

Franzensbad (near to Eger in Bohemia). Altitude 1569 feet. Alkaline sulphated water. The moor baths of Franzensbad are the most famous on the Continent. The town itself is situated on a moor containing all the ingredients of the bath. It is eminently suited for nervous diseases of females.

Freiersbach (in the Black Forest).—Salt and sulphur springs. Steel baths.

Friedrichshall (Saxe-Meiningen). — Sulphated or bitter water. A well-known aperient. Contains in 16 ounces 194 grains of solid constituents. Imported.

Gais (in the Canton Appenzell) in Switzerland.—Altitude 2875 feet. Celebrated for 100 years for whey cures in pulmonary diseases.

Gastein (Wildbad-Gastein, near to Salzburg, Austria).—Altitude 3400 feet. A nearly pure spring, having bath and drinking cures. Specially useful in low atonic nervous diseases. The springs have a temperature of 30°—39° R.

Gleichenberg (Styria).—Alkaline, muriatic, chalybeate. Good for lung diseases.

Gmunden (in Austria).—A climatic health-resort, having milk cure, pneumatic chambers, with various inhalations. Season from June to October.

Görbersdorf (Prussian Schleswig). — A climatic health-resort, 1450 feet above the sea level, has been termed by Weber "the cradle of mountain health-resorts," and of the "hardening open-air treatment of phthisis." The sanatorium of Dr Brehmer lies in a beautiful park with a pine-clad hill belonging to it. The establishment is provided with covered walks of great length and with a winter garden suitably heated and ventilated.

Gräfenberg (Austria; near to Freiwaldau).—Hydropathic Establishment, the first instituted in Germany by Priessnitz, in 1830. Distant from the railway station Hohenstadt by coach eight German miles.

Grauhof (near Goslar, on Harz Mountains).—From Grauhof is imported a water like seltzer, agreeable for table use.

Gries (near to Botzen on the Tyrol).—A climatic health-resort. Season June to September.

Griesbach (Baden).—Altitude 1500 feet. A "compound iron spring" containing Glauber's salts with iron and carbonic acid.

Hall (in the Tyrol).—Four miles from Innsbruck. Moor and iron baths. The springs contain iodide and chloride of sodium. Season May to October; called Kropfwasser (goitre water) because of its great reputation in scrofulous goitre.

Hâvre de Grâce.—A French seaport with bathing facilities.

Heinrichsbad (Canton Appenzell, Switzerland).—2410 feet above sea level. Iron spring and whey establishment. More sheltered than Gais.

Herculesbad (near to Mehadia in the South of Hungary).—Sulphur springs (27° to 44° R.), chloride of sodium spring (46° R.), and connected with this a large bathing establishment.

Hofheim (Nassau).—Hydropathic establishment.

Homburg v. d. Höhe (Nassau).—Altitude 600 feet. A well-known health-resort, frequented greatly by the English aristocracy. Five spas, "Elisabeth," "Louisen," "Stahl," "Ludwigs," "Kaiser," the first being decidedly aperient, containing muriated saline waters, the second mildly so, the third tonic and chalybeate, the fourth diuretic, the fifth chalybeate. The Kurhaus at Homburg is a palatial edifice and the walks

through the woods where the spas are situated are of the most pleasant and health-producing character.

Hyères (France).—Near to Toulon; is a climatic health-resort, especially for pulmonary and nervous patients. Hyères lies on the southern slope of a hill almost surrounded by mountains which protect it from the north winds, while the north-west winds are not fully intercepted. Annual number of rainy days only forty—occurring generally in October and November.

Interlaken (Switzerland).—1863 feet above sea level. Milk cure, also a well-sheltered climatic health-resort.

Ischia.—An island 20 miles from Naples. The springs have all a high temperature, doubtless due to their volcanic origin.

Ischl (Austria).—Railway station Gmunden. Altitude 1400 feet. A saline and sulphurous spa situated in romantic scenery, and with air peculiarly soft and refreshing. Good for nervous complaints, and chronic bronchitis.

Johannisbad (Bohemia).—A mountainous health-resort. Chalybeate with warm baths.

Johannisberg (Nassau).—Reached either by railway or steamer. Hydropathic establishment.

Kainzenbad (Bavaria).—2480 feet above sea level. A climatic health-resort with mineral spa containing soda, sulphur, iron.

Karlsbad (Carlsbad, Bohemia).—Altitude 1200 feet. One of the most famous of the continental spas. The springs are hot and contain alkaline sulphated waters with various salts of soda. The baths connected with the springs are elegant and numerous. Moor baths are also

to be had. Carlsbad is celebrated for its action on the liver, and has for many years been noted for its efficacy in arresting, and in some cases curing diabetes.

Karlsbrunn (Austria).—A cold alkaline and iron spring. Milk cure.

Kissingen (Bavaria).—Altitude 800 feet. The springs, which are famous for internal use, are Rákoczy, Pandur, Maxbrunnen 10° C. The springs used for bathing Soolsprudel 18° C., Schönbornsprudel 20° C. Kissingen is one of the best and most popular of the muriated saline springs of Germany.

Königstein (Nassau).—Altitude 1600 feet. Hydropathic establishment at Falkenstein. Season all the year. Phthisical patients are here treated with a generous diet, wines and alcohol.

Kösen (Prussia).—A very saline spring containing chloride of magnesia.

Krankenheil Tölz (Bavaria).—Altitude 2467 feet. Iodine and sulphurous spring with soda and carbonic acid. Six wells at 7·5° C. The baths of Krankenheil Tölz are similar to those of Kreuznach, and have this advantage over that spring, of lying among the Bavarian Alps and containing a larger quantity of iodine. Like Kreuznach they are useful in scrofulous skin affections.

Kreuznach (Creuznach, Prussia, Rhine Province).—Altitude 285 feet. Iodine and bromine muriated saline baths. This strongly iodised spa has long been famous for the treatment of scrofula, syphilis, tuberculosis, and leucorrhœa. Used also for baths. Season June to September.

Landeck (Prussian Silesia).—Altitude 1398 feet. Lukewarm sulphurous spring (16° to 22° R). Inhalations for bronchial catarrh and "clergyman's sore throat." Season May to October.

Langenbrücken (near Bruschal in Baden).—Altitude 440 feet. A cold sulphurous spring. Useful in chronic catarrh of bladder and rheumatism. Season April to October.

Lauterberg (near the Harz mountains, Province Hanover).—Hydropathic establishment and high health-resort.

Leuk (Switzerland).—Altitude 3527 feet. Hot baths, containing chiefly sulphate of lime; useful in skin diseases; also diuretic. Temp. 41° R.

Lippik (in Slavonia).—Hot spring contains iodine and bromine, and carbonate of soda. Useful in hysteria and uterine enlargements.

Lippspringe (Prussian Westphalia).—Altitude 378 feet. Mild equable climate, useful in bronchial irritation and incipient phthisis. The springs contain lime, soda, and iron, in combination with carbonic acid. Temp. 17° R.

Lucca (Central Italy).—Situated on the slope of a hill surrounded with shady trees. Temperature of spring 116° Fahr. Contains sulphate of lime, carbonate of lime, carbonate of magnesia, chloride of sodium, and chloride of magnesium. Specially used for skin diseases and chronic rheumatism.

Madeira (island belonging to Portugal, in the Atlantic Ocean, lat. N., between 32° 23′ and 33° 7′, long. W., between 13° 30′ and 17° 16′).—A climatic sea

resort for pulmonary complaints, average temperature of the year 18·8° C.; in winter average temperature 17·3° C., in summer average temperature 21·6° C. Complete absence of all dust. Rain in winter seventy-one days, in summer eight. The island consists of a mass of volcanic rocks, which rise to 6,065 feet. Well protected against the north wind.

Malaga (Spain).—On the coast of Grenada. A climatic health-resort.

Maloja.—Situated at the south-west end of the Upper Engadine. Picturesque scenery, sheltered from south wind; partially surrounded by glaciers. Winter health-resort.

Marienbad (Bohemia, station on the Franz Josefs Railway).—Altitude 1900 feet. A celebrated alkaline sulphate spa for gastric disorders; specially noted for efficacy in obesity.

Meran (Tyrol).—Altitude 881 feet. In spring, whey and milk cure. In autumn, grape cure. In winter, climatic health-resort. Alpine climate, southern exposure, sheltered from cold winds. The principal season may be said to extend from September to June. Meran is justly celebrated for the good it effects in all pulmonary diseases, especially the earlier stages of phthisis.

Mont-Dore (France, Auvergne).—A muriated alkaline thermal spring (42° R.); contains arsenic and soda; pulmonary inhalations.

Montreux (Switzerland).—A climatic health-resort, near Vevey, mild and equable without being relaxing.

Münster am Stein (Prussia, four miles from Kreuznach).—Iodide-bromide lithia spring (24½° R.).

Nauheim (Hesse Darmstadt, four miles from Frankfort).—Muriated saline waters with carbonic acid.

Neuenahr (Rhine, Prussia, near Bonn). Altitude 225 feet. Hot spring of saline water, highly charged with carbonic acid. Used in bronchial catarrh, skin diseases, and diabetes.

Neuhaus (Austria).—400 feet above sea. A saline lukewarm spring (29° R.). Season May to October.

Nenndorf (Prussian Westphalia).—Sulphated springs used for drinking, and baths employed for gout and rheumatism.

Neu-Ragoczy (four miles from Halle).—An acid and iron spring. Inhalations.

Neustadt-Eberswalde (near Brandenburg, four miles from Berlin). A saline and iron spring.

Niedernau (Würtemberg).—Altitude 400 feet. A bitter, salt, and carbonate of iron spring.

Niederlangenau.—Iron spring and moor baths.

Nice.—French sea-bathing and climatic health-resort, much frequented. Season October to May.

Obladis (in Tyrol).—A first-class saline muriated spring, near Innsbruck.

Œyenhausen (Prussia, Westphalia).—Very strong carbonic acid and hot saline spring (24° R.). Season May to October. For paralysis and nervous diseases.

Ofen or Buda-Pest, see p. 83.

Ostend (Belgium).—A sea-bathing resort.

Palermo (in Sicily).—A climatic health-resort.

Pau (France, Department Basses-Pyrénées).—Altitude 400 feet. A climatic health-resort for phthisical patients. No fogs or cold winds.

Pfäffers (Switzerland, Canton St Gallen).—Altitude 2240 feet. Indifferent hot sulphur spring (28° R.). Recommended in gout and nervous diseases.

Pisa (Italy).—Climatic health-resort sheltered from north winds.

Plombières (France, Department Vosges).—Altitude 1310 feet. Indifferent hot springs (80°—159° F.). Chiefly used for baths. Railway station St Xertigny (on Loire, Dijon, and Nancy railway.)

Pontresina (5915 feet), about three miles east of St Moritz, is a favourite summer resort. The village is placed on a slope, and has a magnificent open view to the east and south. Its proximity to well-known glaciers renders it a favourite starting place for Alpine tourists.

Püllna (Bohemia).—Bitter saline purgative. No health resort. Water imported to various countries and sold as an aperient water. Twice strength of seidlitz.

Pyrmont (Waldeck).—Altitude 404 feet, fourteen leagues from Hanover. A first class muriated saline iron spring with carbonated bath and drinking cure.

Ragatz (Switzerland, Canton St Gallen).—Altitude 1600 feet. Indifferent hot spring (27° R.). Same therapeutic properties as Pfäffers.

Rehburg (Hanover).—First-class saline and iron spring (12° R.). Milk cure. Railway station Wunstorf.

Reichenhall (Bavaria).—4400 feet above sea level. Saline spa and milk cure. Pulmonary inhalations. Season May to October.

Reinerz (Prussian Schleswig).—1235 feet above sea level. Alkaline muriated iron spring and milk cure.

Season May to October. Railway stations Nachod and Glatz.

Reutlingen (Würtemberg).—Cold sulphur spring.

Rheinfelden (Switzerland, Canton of Aargau). Mud, milk, and grape cure.

Rigi-Kaltbad (Switzerland).—A climatic health-resort 4480 feet above sea level. Milk cure and hydropathic establishment. Railway station Lucerne.

Rohitsch-Sauerbrunn (in Styria).—700 feet above sea level. Railway station Pöltschach. Alkaline saline water highly charged with carbonic acid; taken for gravel. Bath and drink cure. The water is much exported. Season May to October.

Römerbad (Austria) (Styria).—A thermal spring with carbonic acid. Römerquelle 36° C., Amelienquelle 38° C.

Roisdorf (Rhenish Prussia).—Altitude 1000 feet; cold alkaline water. Suited for table use. 29 grs. in 16 oz.

Rosbach (Germany.)—Cold alkaline water. 121 grs. in a gallon.

Rosenheim (Bavaria).—Iron and sulphur spring.

Rothenfelde (Hanover).—Iodine and bromine springs. Railway station Osnabruck (6 miles).

Rothenfels (Baden). Hot saline spring.

Roznau (Moravia).—Altitude 1200 feet. Milk cure. Season May to October.

Saidschütz (Bohemia).—One mile from Bilin. Bitter salt water (12½° R.).

Saint-Sauveur (France). Hautes-Pyrénées. Indifferent thermal spring (27½° R.).

Salzburg (Austria).—Mud baths.

Salzbrunn (Austria).—Altitude 1340 feet. Beautiful situation near Bavarian frontier. Mud baths. Alkaline, saline spa. Milk cure. Season May to October.

Salzschlirf (Hesse Cassel, Germany).—Iodine, bromine, and lithia salts. It also contains some alkaline chalybeate constituents.

Sangerberg (Bohemia, near Marienbad). Chalybeate; sulphate of soda, and sulphur are contained in the spa.

San Remo (Italy, 21 miles from Nice).—An excellent climatic health-resort, on the Riviera. In 1832, Lord Malmesbury notes San Remo "as only a miserable village."

Scarborough (a seaport town in North Riding of Yorkshire).—Altitude 174 feet, called Queen of British watering-places; also possesses two mineral springs considered aperient and alkaline and somewhat tonic.

Schandau (Saxony). — Chalybeate and climatic health-resort (8° to 10° R.). Reached by the Elbe steamers. Railway station Krippen.

Schlangenbad (Nassau, Germany).—933 feet above sea level. Indifferent thermal spring 24° R. Railway station Eltville. Season May to October. Celebrated for its baths, giving to ladies a beautiful complexion and a soft skin.

Schleusingen (Prussia).—1295 feet above sea level. Pine baths and hydropathic establishment.

Schmalkalden (Prussia, Province Hesse). — 1167 feet. Mud and pine baths.

Schmeks (Hungary, Tatrafüred in the Carpathian Mountains).—3500 feet above sea level. Bathing and drinking establishments. Three hydropathic establishments. Three chalybeate spas. Also milk cure. Railway station Poprad-Felka.

Schwalbach (on the Taunus Mountains, Nassau).—1000 feet above sea level. A chalybeate spring (48°—50° F.) with excellent baths. This is a favourite resort for females with uterine complaints, and is highly recommended by English physicians, when iron is necessary for the system, as in anæmia. The baths are highly stimulating and reinvigorating. Every fourth day there should be an intermission in their being taken. Railway stations Wiesbaden and Eltville. Season May to October.

Schweizermühle (Switzerland).—A hydropathic establishment.

Seidlitz (Bohemia).—Contains in sixteen ounces troy, 112 grains. The chief constituents are sulphate of magnesia, sulphate of soda, carbonate of lime and magnesia, sulphate of lime and potass, and chloride of magnesium.

Selters (Nassau).—Altitude 800 feet. Alkaline muriatic spa; furnishes the well-known Seltzer-water.

Sidmouth (a seaport town in Devonshire).—Mild climate adapted to early stage of phthisis, when sea-bathing may be considered advisable.

Soden (Nassau). — Two miles from Frankfort. Altitude 445 feet. A hot thermal saline spa (12° to 19° R.). One of the springs has a temperature of 24° R. Whey and milk cure.

Soden.—An iodine and bromine spa. Great reputation for chest diseases and scrofula. Railway Station, Aschaffenberg.

South Africa.—Of South Africa's health-resorts Bloemfontein (4700 feet) is the best-known place, but equally suitable stations are recognised as possessing a climate everywhere dry, and often in summer very hot and in winter very cold.

Spa (Belgium).—1030 feet above sea level. Twenty miles from Aix-la-Chapelle, a well-known and much frequented chalybeate health-resort. There are no less than sixteen springs, the chief spring being Pouhon in the centre of the town. This spa is used for exportation. It contains four-fifths of a grain of iron in sixteen ounces. Other ingredients, amounting to 3·37 grains of solid constituents in same quantity of water, are salts of soda, lime and magnesia, with eight cubic inches of CO_2. Specially recommended in obstructed portal circulation and the congestion of spleen and liver following intermittent fever, also in flatulent diarrhœa and passive hæmorrhage.

Spezzia (Italy).—Sea-bathing in summer, and climatic health-resort in winter, for phthisical cases.

St Moritz (Switzerland, Upper Engadine).—5710 feet above sea level. A strong acidulous chalybeate spring; bathing and drinking establishments. Railway Station, Chur (Coire), from whence posting conveniences can be obtained to reach St Moritz. A quarter of a grain of carbonate of iron is contained in a pound of water, with lime and solid ingredients. The bracing action of the Alpine air, combined with magnificent

scenery of forest, mountain, lake, and plain, have rendered St Moritz a favourite spa for the English invalid suffering from digestive derangements, nervous diseases, and sluggish circulation. Men engaged in mercantile and literary pursuits, where the mental strain is hard, will find St Moritz one of the best and most invigorating health-resorts at present known.

Steben (in Bavaria).—1786 feet above sea level. A first-class alkaline chalybeate spa with free carbonic acid. Railway station, Hof, 2 miles. The climate is bleak but tonic, there being little shelter against east and north-east winds.

Sternberg (Bohemia).—16 miles from Prague, 1065 feet above sea level. A chalybeate spring with bathing and drinking establishments. Season May to October.

Streitberg (Bavaria).—Lying in a charming valley and sheltered by semicircular hills from north and westerly winds. The climate thus aids the excellent whey cure obtained at Streitberg for incipient phthisis.

Sulza (Saxe-Weimar).—Station on the Thuringian Railway. Has strong saline springs suitable for scrofulous patients. Season May to October.

Sulzbrunn (Bavaria).—One mile from Kempten, 2671 feet above sea level. The spring contains iodide of potassium and other saline constituents, and there is a drinking and bathing establishment. The situation is sheltered and the waters are adapted for various forms of scrofula.

Swansea.—A seaport town of South Wales. Beautiful situation, favourite watering-place.

Swinemünde (Prussia, Pomerania, in the Island of Usedom).—Sea-bathing from June to September.

Sylt (an island on the West coast of Schleswig or rather the village of Westerland).—Excellent sea-bathing.

Tarasp (Switzerland, Lower Engadine).—Lower Engadine on the right side of the River Inn, 4608 feet above the level of the sea. The spa, situated by the side of the river, contains saline and alkaline ingredients, chloride and sulphate of sodium, carbonate of lime and soda, a trace of carbonate of iron, and free carbonic acid. The waters are pleasant to the taste, and are effective in hepatic digestive derangements, chronic gout and rheumatism, hæmorrhoidal complaints, and abnormal stoutness. It may be considered a cold Carlsbad, but it contains more carbonate and less sulphate of soda than that spa. It also has more iron and carbonic acid. The walks about Tarasp are singularly beautiful, and the excellent Alpine air renders walking exercise easy and pleasant. It can be approached by coach from St Moritz, or by railway from Landek (Tyrol), 32 miles, or Landquart (52). Season June to September.

Tarvemünde (near Lübeck).—Sea-bathing.

Tatzmannsdorf (Hungary).—A chalybeate spa. Altitude 1000 feet.

Tegernsee (thirty-one miles south from Munich).—Altitude 2487 feet. A climatic health-resort, especially for phthisical patients. Season 15th May to October.

Teinach (Würtemberg, Black Forest).—1223 above

the level of the sea. Two springs :—(1) First-class alkaline, (2) pure chalybeate. Pine baths and milk cure. The climate is mild, impregnated with exhalations of fir trees, and therefore well suited for tubercular patients.

Teplitz Mährisch (near to Weiskirchen, in Moravia). —Indifferent thermal spa.

Toeplitz or *Teplitz-Schönau* (Bohemia). Altitude 648 feet. Various springs exist at Teplitz and the adjoining village of Schönau. Carbonate of soda is the chief ingredient, and among the gaseous contents is nitrogen in a free state and carbonic acid. (Temp. 29·5° to 39° R.) The springs are drunk by some patients who come to Teplitz, but it is for its baths that it is chiefly famous. For chronic rheumatism, for gout with swellings, and contractions in paralytic diseases, Teplitz is probably the most frequented and best of the Continental spas. The baths are generally ordered cool at first, but as the cure progresses the temperature is carefully increased. Authentic cures of paralysis following fever, or idiopathic, are noted by the physicians of the spa and corroborated by independent observers.

Tönisstein Heilbrunn (Rhine province).—Alkaline and chalybeate; approached by railway or steamer.

Töplitz (near Warasdin in Croatia).—Warm sulphur springs, a nearly "pure sulphur spa" (135° F.). Altitude 900 feet; known to the Romans under the name of "Thermæ Jassæ." The spa is situated on the southern declivity of a mountain and the climate is mild and salubrious.

Topuszko (Croatia).—Indifferent thermal spring (39·46° R.). Mud baths.

Tréport (France, on the coast of Normandy).—Sea-bathing.

Trouville (France, on the coast of Normandy).—A fashionable sea-bathing place.

Truskawiecë (Galicia).—Sulphurous and strong saline bitter water containing hydrogen; milk cure.

Ullersdorf (Moravia).—3800 feet above sea level. Alkaline, saline and sulphurous baths and milk cure.

Ustron (Austrian Schleswig).—Climatic health-resort with whey cure.

Vals (France).—Saline spring, beneficial in indigestion, syphilitic and skin diseases.

Venice (Italy).—Sea-bathing and climatic health-resort.

Vernet (France, Pyrenees).—Hot sulphur springs. The principal sources of the ancient Thermæ used by the Romans.

Vevey (Switzerland, Canton Vaud).—Grape cure.

Vichy (Central France, Department Allier).—787 feet above the level of the sea. Bicarbonate of soda a chief ingredient in spa (Temp. 32°—34° R.) The springs of Vichy are six in number, and in addition to the salt mentioned contain other ingredients, chiefly bicarbonates of the alkalies. They are all impregnated with CO_2 and to some extent with nitrogen and oxygen. The preponderance of alkalies in the Vichy waters has led to its being called "the king of alkaline spas." It is thus pre-eminently an antacid spa, and its use counteracts dyspepsia in many of its forms, and in-

creases the function of the kidneys, dissolving lithates, and even proving beneficial like Carlsbad in diabetes. In vesical catarrh it is unrivalled, and its solvent powers on small bladder concretions may avert the necessity of lithotomy. It is also beneficial in chronic gonorrhœa, an obstinate discharge generally disappearing after a fortnight's use of the waters.

Vöslau (nineteen miles from Vienna).—960 feet above sea level. A hot saline spa 23° C. Season May to September.

Waggis (Switzerland, on the Lake of Lucerne, east of Lucerne).—1350 feet above the sea level. Whey cure for incipient phthisis.

Warmbrunn (in Prussian Silesia).—1100 feet above sea level. Alkaline saline thermal spring (29°—32° R.) Railway Station, Hirschberg. Season May to October. Its baths and waters are like those of Aix-la-Chapelle, and prove serviceable in chronic rheumatism and gout and articular stiffness.

Warnemünde (Mecklenburg).—Sea-bathing.

Weilbach (Prussia).—Altitude 420 feet. Near to Wiesbaden, a sulphur spring twenty minutes from the Station Flörsheim on the Taunus Railway, recommended in chest diseases, rheumatism, and cutaneous affections.

Weissenbourg (Switzerland, Canton Berne).—2922 feet above sea level. An earthy thermal spring (22°—23° R.) Useful in chronic pulmonary catarrhs with tickling cough.

Wiesbaden (Hesse Nassau).—Altitude 346 feet. A hot saline spring (55° R.) situated in a southern declivity of the Taunus range and eight miles from Frankfort.

Wiesbaden is a flourishing town with about 50,000 inhabitants. It is one of the oldest and most celebrated of German watering places. The environs are picturesque and romantic, consisting of rising forests and fertile plains, through which the Rhine and Maine gently flow. The Kursaal is a magnificent structure with a frontage of colossal Ionic columns. The Kochbrunnen (boiling well) is the principal spring of Wiesbaden. The hot boiling spring is ever emitting volumes of vapour, and the constant hissing and bubbling of the waters render its volcanic origin apparent. For centuries Wiesbaden has had a rare reputation for the cure of gout and rheumatism, its waters being taken internally or bathed in. The taste of the water is like "weak chicken soup."

Wiesen.—A small village about twenty-four miles from Coire, on the Landwasser Route. Effectually screened from cold winds of winter by mountain ranges. Said to be two or three degrees warmer than Davos in winter. Antiseptic vapours from pine trees covering the slopes at Wiesen contribute to the therapeutic benefit in phthisis of its high elevation, 4771 feet.

Wight, Isle of (England).—Sea-bathing in summer; climatic health-resort in winter, for phthisis and other pulmonary diseases of a chronic character.

Wildbad (Würtemberg).—Altitude 1300 feet. Black Forest. It is a typical chemically pure thermal spring (27·31° R.), yet its baths are of the most powerful and efficacious character in gout and chronic rheumatism. The bottom of the baths is covered with sand, which

gives a distinct and pleasurable warm feeling to the skin and feet of the bather. On "arthritic swellings, such as are seen in stiffened knee-joints, the waters of Wildbad have a manifest absorbent power; and in nervous complaints, where the worry of business has caused sleeplessness, they have also gained an abiding popularity.

Wildungen (in the principality of Waldeck), 300 feet above the sea level. An earthy spa with an excess of carbonic acid. It is recommended in all chronic diseases of the bladder; and in chronic chest affections.

Woodhall (Lincolnshire).—55° F. A strong spa resembling Kreuznach. It contains iodine and bromine, with chlorides of calcium, magnesium, potassium, more than ½ gr. of bromide of sodium, ¼ gr. of iodide of sodium; 190 grs. in 20 oz., strongly impregnated with carbonic acid. Baths very efficacious in chronic rheumatism and secondary syphilis. Improved conditions for residence at Woodhall are now in progress.

Cheltenham (England).—Muriated saline water aperient. Useful in chronic dysentery, old enlargements of the liver, and spleen and kidney derangements.

Moffat (Scotland).—Sulphurous spa. Useful in skin diseases, and chronic rheumatism.

Strathpeffer (Scotland).—Two strong sulphurous spas. Useful in sciatica, lumbago, chronic rheumatism.

Torquay (England).—A favourite climatic health-resort in phthisis.

METRIC SYSTEM

THE metric system of weights and measures has been employed on the Continent to the exclusion of all others, and in America it is rapidly superseding the older system of writing prescriptions still retained in this country. Before giving a brief abstract of the Austro-German Pharmacopœia, it is essential that the leading facts concerning the metric system should be understood, so that prescriptions for patients going to health resorts on the Continent may be written in the metric instead of the old method.

A metre is the ten millionth part of a quarter of the circumference of the earth, 39·37079 inches.

A gramme is the weight of one cubic centimetre of water (written c.c.) at its greatest density, viz. at the temperature of 4° C. or 39·2° Fahr.

A gramme is equal in weight to 15·432 grain measures; Gramme and cubic centimetre are therefore terms of a like value as regards water, the former referring to metric weight, the latter to metric measure.

The tables denoting "Measures of Length," "Weight," and "Measures of Capacity" will now be given.

MEASURES OF LENGTH.

Millimetre	0·001 of a metre	=	0·03937 inch.
Centimetre	0·01 ,,	=	0·39370 ,,
Decimetre	0·1 ,,	=	3·93707 ,,
Metre		=	39·37079 ,,
Decametre	10 metres =	393·70790 in. =	32 ft. 9·7 ,,
Hectometre	100 ,, =	3937·07900 ,, =	328 ft. 1·07 ,,

Kilometre 1000 metres = 39370·79000 in. = 1093·633 yds.
Myriametre 10000 „ = 393707·90000 „ = 6·213 miles
The English inch = 2·539 centimetres or 0·025 metre
„ „ foot = 3·0479 decimetres or 0·304 „
„ „ yard = 0·9143 metre
„ „ mile = 1·6093 kilometre.

Weight.

	Grm.
Milligramme = $\frac{1}{1000}$ part of the unit = 0·001 of a gramme, 0·015 grain. It is written in metric weight .	·001
Centigramme = $\frac{1}{100}$ part of the unit = 0·01 of a gramme = 0·154 grain. It is written in metric weight . .	·01
Decigramme = $\frac{1}{10}$ part of the unit = 0·1 of a gramme = 1·543 grain. It is written in metric weight . .	·1
Gramme = the unit = 15·432 grains. It is written in metric weight	1·
Decagramme = 10 grammes = 154·323 grains.	lb. av.
Hectogramme = 100 „ = 1543·234 „	= 0·22
Kilogramme = 1000 „ = 15432·348 „	= 2·204
Myriogramme = 10000 „ = 154323·488 „	= 22·046

From the above table the relative value of apothecaries weights and grammes.

Practically, one gramme is equal to 15 grains troy (more exactly 15·432), therefore—

Grain 1 = ·06 grammes, exactly ·06479 = 6·479 centigr.
Drachm ʒj = 4· „ „ 3·8874
Uncia ℥j = 31· „ „ 31·103

Practically with liquids the equivalents are—

♏j = 0·06 cubic centimetre or 0·06 gramme
♏xv = 1· „ „ 1· „
F. ʒj = 4· „ „ 4· „
F. ℥j = 32· „ „ 32· „

Measures of Capacity.

Millilitre = 1 cub. centimetre = 0·061 cub. inch.
Centilitre = 10 „ „ 0·610 „ „
Decilitre = 100 „ „ 6·102 „ „ = 0·176 pint.

Litre = 1 cub. decimetre = 61·027 cub. inch = 1·76 pint.
Decalitre = 17·607 pints = 2·2 galls.
Hectolitre= 22·009 „
Kilolitre = 1 „ metre 220·07 „
Myriolitre= 2200·96 „
The English cubic inch = 16·386 cubic centimetres.
„ „ foot = 28·315 „ decimetres.
„ gallon = 4·543 litres.

The gramme and the cubic centimetre, when referring to liquids, may, with two exceptions, syrup and glycerine, be regarded as equal.

An ordinary teaspoon holds about 5 cubic centimetres, an ordinary tablespoon about 20 c.c.

100 grammes or c.c. of water make about 20 teaspoonfuls, or 5 tablespoonfuls.

The facts mentioned, being apprehended, it is easy to adopt the metric system in making prescriptions.

In France, as in Germany and Russia, all liquids when dispensed are weighed, not measured. The apothecary, in filling up a prescription for grammes, places the bottle in the scale and balances it with some weight, say shot, then puts with it the required weight, and pours into the bottle the required medicine until it balances; then another weight for another medicine, and so on until the prescription is completed.

If instead of grammes cubic centimetres be ordered, he does not weigh but measures out the desired amount in a graduated glass marked in cubic centimetres. "Many druggists," says an American writer, "particularly in the country, do not keep the metric weights but only these 'graduates,' and when they have to dispense a metric prescription simply measure out in the case of fluids the same number of cubic centimetres that the prescription demands of grammes; and in the case of solids they calculate from grammes to grains, and then weigh out an equivalent number of grains or scruples."

If we order a two-ounce bottle with a teaspoonful or a drachm dose, each dose to contain one grain of any substance, the whole amount of that substance ordered will be 15 grains or

1 gramme. So for each dose of a grain or a minim let us prescribe a gramme of the substance desired, and the prescription is finished.

EXAMPLE.

Recipe—

Sodæ Bicarbonatis (gr. j in each dose) .	1 grm.
Tincturæ Camphoræ Compositæ (ℳxij in each dose)	12 ,,
Syrupi Scillæ (ℳxv in each dose) . .	15 ,,
Aquæ Cinnamomi (ad ℨij) ad . . .	60 ,,

Misce. *Signa.*—A teaspoonful a dose.

If we wish to order a four-ounce bottle with a dessertspoonful as a dose, we simply double the size of the bottle and the dose. With an eight-ounce bottle and tablespoonful dose the same rule necessarily applies.

Recipe—

Extracti Glycyrrhizæ (ℳx in each dose) .	10 grm.
Aquæ Cinnamomi (ℳxlj in each dose) .	40 ,,
Aquæ (ad ℨviij) ad	250 ,,

Misce. *Signa.*—A tablespoonful a dose.

If it is desired to give a two-ounce bottle with a tablespoonful dose, it is merely necessary to order one quarter as many grammes, as in the previous prescription, when a teaspoonful was prescribed as the dose, the dose of a tablespoonful being four times that of a teaspoonful. If a four-ounce bottle and a teaspoonful dose are selected, then order twice as many grammes as those stated in the previous example. If, on the other hand, it is a four-ounce bottle and tablespoonful dose, order half as many grammes as usual. If a six-ounce bottle and teaspoonful dose, order three times as many grammes as usual.

Recipe—

Acidi Hydrocyanici diluti (ℳss in each dose)	1 grm.
Syrupi Scillæ (ℳxxv)	50 ,,
Aquæ Camphoræ (ad ℨiv) ad	120 ,,

A teaspoonful a dose.

If we have to prescribe a fluid of a higher sp. gr. than water, we have to proceed in a different way to that mentioned. Syrup and glycerine have higher sp. gr. than water. 1 grm. of syrup (or 15 grains) has not the same bulk as 15 grammes of water, for it is only equal in bulk to 10 grammes of that fluid. Hence we perceive that desiring a certain bulk of syrup in the prescription we must order one third more of it than we would of a fluid having a sp. gr. like that of water. Glycerine is one quarter heavier than water, hence in a prescription we must order one quarter more of it.

Recipe—

Tincturæ Ferri Perchloridi (♏v in each dose)	5 grm.
Potassæ Chloratis (gr. iij in one dose) .	3 „
Aquæ Cinnamomi (♏xl in one dose) . .	40 „
Glycerini (♏40+¼ of 40 = 50) . . .	50 „
Aquæ (ad ℥viij) ad	250 „

Signa.—A teaspoonful a dose.

Practically it is necessary only to remember in writing prescriptions the different sp. gr. of syrup and glycerine in comparison with water, for the difference of bulk of other fluids is so little that it may be passed by.

Powders, pills, and similar preparations are ordered in the metric system on a similar principle. The prescription for pills or powder is based upon ordering 15, then each grain desired in a single pill will correspond with one gramme in the sum total.

Recipe—

Potassæ Bicarbonatis (gr. ij in each powder) .	2 grm.
Pulveris Cinnamomi Compositi (gr. iv in each powder)	4 „
Bismuthi Subnitratis (gr. vj in each powder)	6 „

Misce. Divide into xv powders.

For the sake of simplicity in prescriptions it is well to order of the powder a number which is either a factor or a multiple of a factor of 15.

Recipe—

Calomelanos, gr. vij in each powder less $\frac{1}{3}$ = gr. $\frac{2}{3}$ = ... 0·63 grm.

Pulveris Rhei, gr. vj in each powder less $\frac{1}{3}$ = gr. iv = ... 4 „

Pulveris Cretæ Præparatæ, gr. iij in each powder less $\frac{1}{3}$ = gr. ij = ... 2 „

Misce. Divide into powders No. x (15 − $\frac{1}{3}$ of 15 = 10).

In ordering dry preparations of powders or pills a slight error should not be overlooked. Namely, for every grain we order in a dose we get a larger quantity than this, viz. $1\frac{1}{35}$ grain; since 1 gramme equals 15·432 grains.

PREPARATIONS AND DOSES OF CHIEF DRUGS, AUSTRO-GERMAN PHARMACOPŒIA (METRIC SYSTEM);

AND ALSO

BRITISH PHARMACOPŒIAL PREPARATIONS AND DOSES OF SAME DRUGS (OLD METHOD).

Absynthii herba (Wormwood). Tinctura composita, 10—20 drops thrice daily.

Acidum aceticum dilutum. 4·0—8·0 with 60·0 of water. In B.P. ʒss to ʒj.

Acidum carbolicum (Carbolic acid). Antiseptic, applied externally in lupus, sycosis, eczema. Diluted 1·0 with 40·0 of glycerine, alcohol, or water.

Acidum chrysophanicum. 1 to 60 of lard. Applied in psoriasis.

Acidum gallicum. Astringent in powder, pill, or solution, 0·1—0·5 a dose. B.P. gr. v—ʒss.

Acidum hydrocyanicum dilutum. Dose 1—4 drops with 120·0 of distilled water. B.P. Acidum hydrocyanicum dilutum ♏ij—iv.

Acidum lacticum. 4·0—8·0 daily with water or sugar and water. Applied with 20·0 of water to the false membrane of diphtheria and croup. B.P. gr. xv—xxx.

Acidum muriaticum concentratum and Acidum hydrochloricum. 4·0—8·0 with 800·0 of water for mouth-wash or

gargle, 2·0—4·0 with 150·0 of syrup internally. B.P. (Acidum hydrochloricum ℥v—x. Acidum hydrochloricum dilutum ℥xv—℥ss.)

Acidum nitricum. 0·30—1 or B.P. ℥v—xv. Acidum nitricum dilutum 1·25—2·50. B.P. ℥xx—xl.

Acidum phosphoricum. In mixture 3 drops to 10 or 30 drops of water thrice daily. B.P. ℥v—x.

Acidum Reitzii compositum. (Acid. nitric. 80·0. Acid. mur., Æth. sulph., āā 10·0. Borax 7·5.) Given internally in the proportion of 7·5—4·5 of Liquor Hoffmanni. Daily dose 1—10 drops in syrup.

Acidum salicylicum. 0·15 hourly, as a gargle 4·0 in 240·0 of spirit of wine and water; externally, as a lotion for wounds or ulcers, 2·0—100·0 of water. B.P. Acidum salicylicum gr. x—℥j. Sodii salicylas gr. xx—℥j. Lithii salicylas gr. xx—℥j.

Acidum sulfuricum purum. 2—6 drops in water six times a day. Acidum sulphuricum dilutum 2·0—4·0 to 10 ounces of water. Dose 0·60—1·0; gargle 2·0—8·0 with 200·0 of water. Acidum Halleri (Elixir acid. Halleri) 5—20 drops six times a day. B.P. Acid. sulph. aromat. ℥x—xx. Acid. sulph. dilutum ℥x—℥ss.

Acidum tannicum. Astringent in powder, pill, or solution, 0·01—0·10, four or six times a day; as an injection in venereal diseases 0·8—15·0 to 100·0 or 200·0 of water. B.P. Acid. tannic. gr. j—xx.

Acidum tartaricum (sal essentiale Tartaric). In powder or solution 0·8—1·5 every two or three hours. B.P. Acid tartaric gr. x—xx.

Aconitum (Narcoticum). Extract in powder or pill 0·04—0·2. Tinctura 15 drops daily. B.P. Extract of aconite gr. $\frac{1}{6}$—$\frac{1}{4}$. Tincture ℥ss—v.

Æther amyl nitrosus. 2 or 3 drops inhaled same as B.P. Nitrite of amyl capsules, 2 to 3 drops in each capsule.

Æther camphoratus (Tinct. ætherea camphor.). 10—20 drops as an antispasmodic.

Æther ozonatus. 3—20 drops thrice daily, given internally, in mixture, with ether. Teaspoonful dose. Baryi

hyperoxydati 1, Ætheris, p. 50, Acid. hydrochlor. pur. 2, Aqua destill. 8.

Æther (Sulphuric ether). For pharmacopœial use.

Æther fortior. Contains about 94 ethyl oxide and about 6 alcohol. B.P. Æther purus ʒss—j, 1·9—3·75. B.P. Spiritus ætheris ♏xxx—lx, 3·75—11·25 (ether (30) diluted with twice its volume of alcohol 70). Hoffmann's anodyne (stronger ether 30, alcohol 67, ethereal oil 3 parts). B.P. Spiritus ætheris nitrosi ♏xxx—cxx, 1·90—3·75.

Alcohol. 91 parts ethyl alcohol and 9 parts of water; in diluted proof spirit, 3—5.

Aloë lucida (Drasticum). In powder or pill 0·04—0·08 two or three times a day. Enema 0·4—12·0. Aqueous extract or tincture 8—20 drops. B.P. Extractum gr. ij—iij. Tinctura ♏lx—cxx. Decoct. aloes co. ʒss—ij.

Alumen. In powder 0·15—0·75 every two hours. Injection 4·0—8·0—400·0. Eye-wash 0·06—0·12—30·0 water. Alumen exsiccatum applied to sore-throat. B.P. Alumen gr. x—xv.

Ammonia (A. pura, liquida). Dose 5—10 drops. In mixture 1·5—2·0 with 200·0 of water. B.P. Liq. ammon. ♏x—xx. Ammon. acet. sol. dil. (Spir. mindereri) in drops or mixture 8·0—15·0 per day. B.P. Liq. ammon. acetat. ♏cxx—ʒss. Ammoniæ carbon. 0·8—4·0 in powder or pill, 0·4—2·0 in solution externally. B.P. gr. iij—x. Spirit.-ammon. aromat. ♏xx—lx. Ammonii chloridum (sal ammoniac) 0·33—0·65. B.P. gr. v—x.

Ammoniacum (Gummi) depur. In pill or emulsion with yolk of egg 0·4—0·8 twice daily. B.P. Ammoniaci pulv. gr. x—xx. Mist. ammoniaci ʒss—j.

Amygd. amaræ (sedativum). 3·0—8·0 in powder. Aqua amygd. concent. 10—30 drops. Aq. amygd. am. concent. 10—60 drops. Mist. amygd. amaræ ʒss.

Amygd. dulces. As an emulsion 30·0—240·0. B.P. Mist. amygd. as a vehicle. Pulvis amygd. co. gr. lx—cxx.

Apomorphinum hydrochloricum. A powerful emetic in powder with sugar internally 0·01—0·02. For subcutaneous injection 0·01 with 1 of water, $\frac{1}{10}$ gr. internally, $\frac{1}{20}$ gr. subcutaneously.

Aqua Luciæ (Eau de Lucc). (Spirit. sap., spt. vin. rect., āā 10·0, Liquor. amm. const. 15·0, Bals. vitæ Hoffmann 0·5). In bites of insects or snakes; parts to be washed.

Aq. Phagedænica lutea (Yellow wash). (Hydrarg. mur. corros. Pulv. 0·1. Aquæ calcis 30·0.) **Aq. Phagedænica nigra** (black wash). (Calomelanos 2·0. Pulv. opii 2·5. Aq. calcis 100·0.) Washes employed in syphilitic ulcers.

Aq. purgativa (Eau purgative gazeuse). Crystallised phosphate of soda 40·0. Bicarb. sod. 5·0. Aq. destill. 625·0. Acid. citric. 10·0.

Argentum nitricum fusum et crystallis. Given internally in solution or pill 0·01—0·04 twice daily. As an injection 0·06—0·15 with 30·0 water. As an eye-wash 0·06—0·6 to 30·0—120·0 of water. B.P. Argenti nitras gr. $\frac{1}{6}$ to $\frac{1}{3}$.

Arsenicum album. In solution internally 0·06—400·0 water, $\frac{1}{2}$ to 1 drop thrice daily. Ung. 0·15—0·30 with 20·0 of lard. "Solutio arsenicalis Fowleri" (Arsen. alb., kali carbon., āā 1·0, Aq. destill., Spirit. angel. compos. āā 40); 90 drops contain Arsenic 0·40. Dose 7 drops per day and upwards. "Solutio arsenicalis Bietti" contains Ammonii arsen. 0·06 to 30·0 water. "Solutio Donovani" is a solution of arsenic and hydriodate of mercury in distilled water; 4·0 hold 0·01 arsenious acid, 0·02 mercury, and 0·05 iodine. Dose 10 to 15 drops. "Pulv. Cosmi." (cinnab. 2· Oss. combust., sang. drac., āā 0·3, Ars. albi 0·6.) B.P. Acid. arseniosum. Dose gr. $\frac{1}{60}$—$\frac{1}{12}$ in solution. Liquor arsenicalis (1 in 120). Dose ♏ij—viij. Liquor arsenici hydrochloricus (1 in 120). Dose ♏ij—viij. Liquor Arsenici et Hydrargyri hydriodatis. Dose ♏x—xxx.

Assafœtida. Gum resin 0·3—1·0 two or three times daily, or 2·0—4·0 with Spirit of Minder. and aromatic water 200·0. B.P. Assafœtida gr. v. Tinctura assafœt. ♏xxx—lx.

Aurantii flores. Fl. aurantii for pharmaceutical purposes. Aqua and syrupus as vehicles.

Balsamum peruvianum. In pill, bolus, or emulsion 0·3—1·0. B.P. ♏x—xv.

Belladonnæ folia. Of the leaves, in powder or pill, 0·01—0·15. Extractum 0·01—0·12. Infusion 1·0—3·0 with 200·0 of

water. As an eye-wash 0·08 to 40·0. In solution 1·—16·0 water. B.P. Extract gr. $\frac{1}{4}$—$\frac{1}{2}$. Tincture ♏v—xx. Succus ♏v—xv. Unguentum 1—5.

Belladonnæ radix. 0·01—0·04. Atropina et atropinæ sulphas. Of latter 0·05 to 5·0 of water, for dilating pupil. B.P. Linimentum Bellad., Liq. atrop. ♏j. Unguent. atrop. (1 to 60). Liq. atrop. sulph. ♏j—ij = $\frac{1}{120}$—$\frac{1}{60}$ of a grain.

Benzoë. In pill or emulsion 0·3—1·0. Flores Benzoes (Acidum benzoicum) 0·2—0·6. B.P. Tinct. Benzoini Compos. ʒss—j, contains benzoin 8, storax 6, bals. tolu 2, aloes $1\frac{1}{2}$, with alcohol to 80 parts. Acidum benzoicum gr. v—xv. Ammoniæ benzoas gr. x—xx. Sodæ benzoas gr. cxx.

Bismuthum subnitricum (Magisterium bismuthi). 0·3—0·4 twice or thrice daily. Bismuthum carbonicum 0·6—0·2. Bismuthum tannicum 0·1—0·2. Bismuthum valerianicum 0·04—0·15. P.B. Bismuthi subnitras et Bismuthi carbonas gr. v—xv. Liq. Bismuthi et Ammon. Citr. ʒss—j.

Borax (Boras sodæ). 0·2—1·0 for children, 2·0—4·0 with 60·0 of water or honey applied to aphthæ of children. Acidum boracicum (Sal Sedat. Hombergi) 4·0—15·0, in powder or solution. B.P. Biboras sodæ. Dose gr. v—xxx. Mcl.

Brayeræ (Kousso) flores. Decoctum 30·0—50·0, 500·0 of water, taken as a vermifuge for tapeworm early in the morning. B.P. Infusum cusso ʒiv for a dose.

Bryoniæ radix. 15·0—200·0 Infusum. Succus, 0·5—1·0 per diem. Bryonia powdered gr. xxx. Tinct. bryon. ʒj—ij.

Calcium carbonic. pur. 0·6—0·2. B.P. gr. v—xl.

Calcaria hypophosphorosa. 0·15—0·30 with syrup 2·0 in phthisis. B.P. Calcis Hypophosphis gr. iij, Sodæ and Potass. Hypophos. gr. j, with citric acid, lemon, and sugar, form "syrupus calcis hypophosphitis" ʒj—ij. Calcaria lactica 0·3—0·5. Calcaria Phosphoric 0·3—0·6. B.P. gr. x. Calc. pasta (Caustica Viennensis). Calc. vivæ 25·0, Kali caust. 20·0, made into a paste with alcohol. Aq. calcis 30·0—100·0 given with milk. B.P. Liquor calcis ʒss—ij.

Camphora. In powder, pill, emulsion, solution, mixture, 0·06—0·33 three or four times a day. Spirit. camph. 10—12

drops. Liniment. Sap. camph. (soap 10·0, camph. 5·0, Ol. rosmar 1·0, alcohol 70·0 to 100·0 water). B.P. Aq. camphoræ ʒss—j. Spirit. camph. ♏x—xxx. Tinct. camph. co. ♏xv—lx (1 of opium in 240). Linim. co. Linim. sap.

Cannabis indica. 0·04—0·2 daily in extract. Tinctura 2—10 drops. Semina as an emulsion 10·0—30·0, with 400·0 of water. B.P. Ext. Can. ind. gr. ¼—j. Tinctura ♏v—xx.

Cantharides. In pill or emulsion 0·01—0·04. Tinctura 5—20 drops. Emplast. et unguent. B.P. Tinct. Cantha. ♏v—xx. Charta et Liquor Epispasticus, Linim. et unguent.

Capsicum annuum (Fruit). Powder or pill 0·06—0·4, thrice daily. Tinctura 10—15 drops. B.P. Capsicum gr. ½—j, tinctura ♏x—xx.

Carbo vegetabilis. Carbonium iodat. 0·06—0·02. C. sulfur. (Alcohol sulfuris) 3—8 drops. B.P. Carbo ligni gr. xx—lx.

Cardamomi Semina. In powder or pill 0·3—0·6. B.P. Tinct. Card. co ♏lx—cxx. Pulvis aromaticus gr. xxx.

Caryophylli aromat. Tinctura 15—30 drops. B.P. Ol. caryophyl. ♏ij. Infusum caryophylli ʒj—ij.

Cascarillæ cortex. Pulv. 1·5—1·3. Tinctura cascar. 10—20 drops. B.P. gr. x to xxx, twice daily. Inf. cascar. ʒj—ij, Tinct. cascar. ♏xx—cxx.

Cassia cinnamomea. Infusion 4·0—8·0 in 200·0. Tinctura 10—30 drops. B.P. Pulv. cassiæ gr. lx—cxx.

Catechu. Pulv. 0·2—1·0 (or in solution or with alcohol 6·0—100·0. Tinctura 10—30 drops). B.P. Pulv. cat. co. gr. xv—xxx. Tinct. cat. ♏xxx—cxx. Inf. cat. ʒj—ij. Trochisci.

Ceratum plumb. compos. (Goulard's extract). Ungt. Plumb. 25·0, Camphora 0·01.

Chamomillæ vulgaris (flor.). Inf. 4·0—2·0 Extract in pill 0·5—0·6. Tinctura 10—30 drops. B.P. Extract. anthem. gr. ij—x. Infusum anthem. ʒj—ij, Oleum anthem. ♏ij—iv.

Charta sinapinata (Mustard paper).

China (Cortex Chinæ regius, ruber, fuscus). In powder or pill 1·5—3, twice or thrice daily. Infusion 15·0—30·0, with 400·0—800·0 of water. Extract in pill 0·3. Tincture 30—80 drops. Chinæ tinct. comp. (Elixir rob. Whyttii) given with

sugar or mixture 30—80 drops. Chininum bisulfuricum, muriaticum, sulfuricum, in powder, pill, or solution 0·6, 0·8—1·5 in twenty-four hours. Enemata 0·3 to 1·0 once or twice daily. Ch. phosph. 0·2 to 0·8 twice daily. Ch. tannicum 0·04—0·3 in pill. Ch. tartaricum 0·04, 0·2—1·4. B.P. Tinct. cinchon. co. ℥xxx—cxx. Tinct. cinchon. ℥lx—cxx. Ext. cinchon. liquid. ℥x—xxx. Infus. cinchon. ℥j—ij. Quiniæ sulphas gr. j—v. Pil. Quiniæ (1 in 1⅓), Vinum quiniæ ℥ss—℥j. Tinct. ℥lx—xc.

Chloralum hydratum. In mixture 1·0—2·0, with 100·0 of water and 10·0—20·0 of syrup. In powder 0·5—1·0. B.P. Chloral gr. v—x. Syrupus chloral. ℥xxx—cxx (gr. j in ℥vj).

Chlorodyne (Dr. Collis Brown). 30—40 drops as an astringent.

Chloroformum. 4—10 drops in Cholera, Pneumonia, Delirium Tremens. With or without ether as an inhalation. B.P. Aq. Chloroform. ℥ss—ij. Liniment. Chloroformi, Spirit. Chloroform. ℥x—lx. Tinct. Chlor. co. ℥xx—lx (1 in 10).

Cigaretæ antiasthmatica. Prepared from belladonna, stramonium, opium, and laurel water.

Cigarette benzoinæ. Against aphonia, loss of voice.

Cina (Santoninum). Semina. (Vermifuge) 0·8 to 30·0 of water. Enema 2·0—4·0. Extract (pill) 0·2—0·3, thrice daily. B.P. Santonin gr. ij.

Coca—"analeptic." Powder 0·3—0·6. Decoct. 4·0—8·0 with 400·0—800·0 of water. Hydrochlorate of cocaine, dose $\frac{1}{32}$ to $\frac{1}{2}$ gr.

Colchicum autumnale (Bulb). In powder or pill ·08—·6. Tincture 20—40 drops. Vinum colchici 1—2 teaspoonfuls. Acetum colchici 1·5—5·0. Colchicinum ·001—·002. B.P. Colchicum root, extract. gr. j—iv. Extract. colch. acet. gr. j—ij. Vinum ℥x—xxx. Colchici semina; Tinct. colch. sem. ℥x—xxx.

Colocynthides (Fruit pulp). Drastic. In powder or pill 0·02—0·12. Decoct. 12·0—300·0. B.P. Extract. col. co. gr. ij—v. Pil. col. co. gr. v—x. Pil. col. et hyoscyam. gr. v—x.

Colombo radix (B.P. Calumba). In powder or pill 0·02—0·12. Decoct. 8·0—15·0 to 200·0 of water. Extract 0·3—0·6. B.P. Extract gr. ij. Inf. ℥j—ij. Tinct. ℥xxx—cxx.

Conii maculati herba (Cicutæ). Generally used in fomentations and as an inhalation, 0·02—0·025. Tincture 10—20 drops. Unguent. et emplast. Coniinum 1 drop to 100 of Aq. menthæ pip., dose a teaspoonful. B.P. Extract gr. iv—viij. Succus ℥xxx—lx. Pil. conii co. gr. v—x. Vapor conii 1 in 10 of water inhaled.

Copaiva. Balsamum. 20—40 drops a dose. Ol. copaivæ æth. 10—20 drops dose. B.P. Copaibæ (oleo resin) ℥xx—lx. Ol. copaibæ ℥v—xx.

Creosotum. 2—4 drops in pill. 5—20 drops with water 15—30. Aqua creosoti 20 drops to 120 of water. B.P. Creasotum ℥j—iij. Mist. creas. ʒj—ij. Unguent. (1 in 9), vapor. ℥xij to ʒviij of water.

Crocus austriacus. Powder 0·2—0·6. Infusion 2·5—5. Tinct. 10—20 drops. B.P. Tincture ℥xxx—cxx.

Crotonis oleum. 1—2 drops on sugar. B.P. Linimentum erot. (1 in 8).

Cubebæ. In powder or pill 1·5—6 three or four times a day. Extract in pill 0·3—1. Æth. ol. 3—4 drops three or four times a day. B.P. Oleum cubebæ ℥v—xx. Tinct. cub. ℥lx—cxx.

Cuprum aluminatum (Lapis divinus). In solution 0·8—0·15 with 35·0 of water as an eye-wash. 0·3—1·5 with 35·0 of water as an injection.

Cuprum sulfuricum. Pill, powder, and solution 0·01—0·02 twice or thrice a day. B.P. Cupri sulphas gr. ss tonic; gr. x to ʒij water as an emetic.

Decoct. Zitmanni fort. 420·0 sarsaparilla root with 30 kilogrammes of water are macerated for twenty-four hours, then alum is added 25·0, calom. 2·5, cinnab. 4·5, and the decoction is boiled until 10 kilogrammes result; then anise seeds 15·0, sennæ 100·0, liquorice root 50·0 are added, and the whole boiled, pressed, and strained.

Decoctum Zitmanni mitius. The root and branches of sarsaparilla 230·0 in 30 kilogrammes of water are boiled down to 20 kilogrammes. Then Cort. citri, cassiæ, cinnamon, cardamom, liquorice root, of each 12·0, are added, boiled, and the whole pressed.

Digitalis purpureæ folia. In powder or pill 0·02—0·08. Infusum 0·03—1·5 with 80·0 of water. Dose a teaspoonful. Tincture 5—20 drops two to three times a day. Digitalinum 0·008. B.P. In pill, gr. $\frac{1}{60}$—$\frac{1}{30}$. Infusum digitalis ℥cxx—℥ss. Tinctura digital. ℥x—xxx.

Elaterium (drasticum) (diureticum). 0·05, 0·1, 0·2, in powder or pill. Elaterin 0·003—0·004 three times daily. B.P. Elaterium gr. $\frac{1}{16}$—$\frac{1}{2}$. Pulvis elater. comp. gr. $\frac{1}{2}$—v.

Elect. anthelminticum (Male-fern root). Root of male fern, valerian flowers, sulphate of potash, of each 2·5, Aq. dest., sweetened with honey, 30·0.

Elixir antiasthmaticum. Fol. digit. 5·0, Rad. liq. 10·0, Liquor. sant. rub. 1·0, Spirit. vin. rect., Aq. fœn., āā 25·0. Dose 15, 20, 25 drops, three or four times daily.

Elixir pepsini comp. is prepared with pepsine, sherry, syrup of orange, of each 50·0, Tinct. rhei, Vin. aromat. et Amar. 10·0. One teaspoonful dose.

Emplastrum adhæsiv. Pettenkoferi. Sap. calcarei 40·0, Terebinth. coct. 20·0, Sebi ovilli 50·0.

Emplastrum ammoniac, assafœt., galbani, are prepared with resin of pine and yellow wax.

Emplastrum cantharidis (fly blister).

Emplastrum saponatum. For rheumatism.

Ergota. Powder 1·9. B.P. gr. xv—xxx. Extractum ergotæ 0·33—1·90. Extract. ergotæ liquidum 1·9. B.P. Ext. ergot. liquid. ℥xv—xxx. Infusum ergotæ ℥j—ij. Tinct. ℥xv—lx.

Ergotin (Bonjean's) 0·33—0·65. B.P. gr. v—x.

Eucalyptus globulus 5·0—10·0 in infusion. Tinct. eucalypt. 3·0—7·0, or ℥xv—cxx.

Extractum malti. 10·0—40·0. Extract. malti ferratum (ext. malt 96·0, Ferri pyrophosph. cum ammon. citr. 2·0. Aq. destill. 3·0. Dose 10·0—30·0).

Extractum rhei. In pill 0·10—0·30 thrice daily. B.P. gr. v—x.

Fel tauri depur. 0·6—2·0 in pill or aromatic water. B.P. Fel Bov. Purif. gr. iij—vj.

Ferrum oxydatum dialysatum (Liquor ferri peroxychlorati). 5, 10, 20 drops for a dose.

„ carbonicum saccharatum. 0·08—0·6. B.P. gr. v—xx.

„ ammoniat. 0·25—0·6.

„ ammon. cit. 0·2—1·0 per day. B.P. Ferri et ammon. cit. gr. v—x.

„ ammon. tart. 4·0—30·0 of water a teaspoonful dose.

„ arsenicum. 0·1—0·02. B.P. gr. $\frac{1}{16}$—$\frac{1}{2}$.

„ bromatum. 0·08—0·3 per day.

„ hydrocyanicum. 0·08—0·3 per day.

„ lacticum. 0·08—0·2. B.P. gr. j—v.

„ limatum alcoholisatum. 0·08—0·2.

„ oxydato-oxydulatum. 0·08—0·2.

„ phosphoricum oxydulatum. 0·08—0·3—0·6. B.P. Ferri phosph. gr. v—x, Syr. ferri phosph. ℥xxx—℥ss.

„ redactum. 0·20—0·40. B.P. gr. j—v.

„ sesquichloratum solutum. 0·15—0·4. B.P. Tinct. ferri perchlor. ℥x—xxx.

„ sulfuricum. In pill and solution, 0·04—0·03 twice or thrice a day; as an injection 0·08—0·06. B.P. gr. iij—v.

„ tannicum. 0·6—1·0 in syrup of cinnamon or in pill with extract of absinthe, given in chlorosis.

„ tartaricum. 0·3—0·6. B.P. Ferrum tartaratum gr. v—x.

„ valerianicum. 0·08—0·15.

Blaud's pills: equal weights of Potass. carb. and Ferri sulph., 0·60. Given in chlorosis, first three daily, afterwards increasing by one pill daily until eighteen is reached.

Filix mas (Anthelmintic). Root reduced to powder 2·0—8·0. Æth. extr. 1·5 with powder of root of male-fern 20·0 early in the morning, or in the evening at 10 p.m. B.P. Powder lx—clxxx. Extractum filicis liquidum ℥lx—lxxx.

Gallæ quercus. 15·0—30·0 to 400·0 of water in decoction.

B.P. Tinctura ♏xxx—cxx. Unguent. gall. et Unguent. gall. c. Opio. Acidum Tannicum gr. v.

Gelsemii radix. 0·05—0·2 thrice daily. Tinct. gelsemii 0·5—1·0 in water three or four times daily. Ext. gelsemii 0·05—0·3 three times a day. Tinctura gelsemii ♏x—xx.

Gentianæ radix. Inf. 70·0—100·0—250·0 aq. Gentianin 0·3—400·0 alcohol. Tinct. gentian 4·0—8·0 of mixture. B.P. Extractum gentianæ gr. x—xv. Infusum gentianæ comp. ℥j—ij. Mist. gentian. ℥ss—j. Tinct. gent. co. lx—cxx.

Glycerinum. 70·0—100·0 per day. B.P. Glycerinum acid. carbol. Glycerinum acid. gallici. Glycerinum acid. tannic. Glycerinum boracis. Glycerinum amyli. Strength of all 1 in 4½ except Glycerinum amyli, 1 in 8½.

Granati rad. cortex recens. In powder 4·0—8·0. Decoct. 30·0—60·0—250·0 of water. Extract in solution 15·0—100·0 of water. B.P. Decoctum granati radicis (1 in 10) ℥j—ij.

Hordeum vulg. Decoct. 30·0—400·0 of water. B.P. Decoct. ad libitum.

Humuli lupuli strobili. Inf. 4·0—25·0 to 200·0—400·0 of water. Ext. 0·8—0·12. Tinct. 4·0—8·0. Lupulin 0·3—0·6—1 in powder or pill. B.P. Extractum lupuli gr. v—x. Infusum ℥j—ij. Tinct. ♏xxx—cxx.

Hydrargyrum acet. oxyd. 4·0—240·0 of rose water.

Hydrargyrum bichloratum ammoniatum (M. præcip. alb.), also "eye ointment" 0·08—0·4 with 4·0 of fresh butter.

Hydrargyrum bichlorat. corrosivum, in solution or pill, 0·004—0·001—0·06; also "mouth wash," 0·06—0·1 with 30·0 of water; "enema," 0·06—0·1; "eye-wash," 0·02—60·0 of water; as a lotion, 0·06—0·1 to 30·0 of water. B.P. Hydrarg. perchlor. (corrosive sublimate) gr. $\frac{1}{16}$—$\frac{1}{8}$. Liquor. hydrarg. perchlor. ♏xxx—cxx. Lotio hydrarg. flav. (gr. xviij to aq. calcis ℥x).

Hydrargyrum bijodatum rubrum. In powder or pill, alcoholic or ethereal solution 0·3. Ointment 0·08—0·2—4·0. B.P. $\frac{1}{16}$ increasing $\frac{1}{4}$ gr. Unguent. hydrarg. iod. rub. (1 in 28).

Hydrargyrum c. Cretâ. 0·1—0·3. B.P. gr. iij—viij.

Hydrargyrum chlorat. mite (Calomel). In powder or

pill 0·04—0·6 twice or thrice daily. Unguent. 0·06—0·6—4·0. B.P. Plummer's pill, or Pil. hydrarg. subchlor. co. (1 in 5) gr. v—x. Alterative gr. ss—ij, purgative gr. ij—viij.

Hydrargyrum iodatum flavum (Protoiod. hydrarg.). In powder or pill 0·04—0·2. "Eye salve" 0·1—0·2—4·0. B.P. Hydrarg. iodid. viride gr. j—iij.

Hydrargyrum oxyd. (Merc. præcip.). In pill or powder 0·01—0·04. Unguentum 0·5—0·6—4·0 of lard. "Eye salve" 0·08—4·0 of lard. B.P. Pil. hydrarg. gr. iij—vj. Unguent. (1 in 2).

Hydrargyrum tannicum. 0·1 for dose thrice daily.

Hyoscyamus niger (Folia). Pill or powder 1·0—0·2. Inf. 2·0—4·0 to 200·0 of water. Extract. 0·03—0·02. Hyoscyamin 0·07—35·0 of distilled water for dilating the pupil. B.P. Extract. gr. iij—vj. Succus ♏xxx—lx. Tinct. hyoscyami ♏xv—lx.

Iodoformum. 0·05—0·10 in powder or pill twice daily, with water 1·0—2·0; collodion 10·0—20·0 for painting. Gr. v with mucilage.

Iodum. In solution 0·01—0·04 with 1·0 of Natr. muriat. in 400·0 aq. destill. "Ointment" 0·6—33·0. "Tincture" 2—10 drops. "Injection" 1·0 or 2·0—30·0 of water. B.P. Tinctura ♏v—xx. Liniment. (1 in 9). Unguentum (1 in 31). Vapor ♏lx—℥j of water.

Iod. amylum. 2·0 twice daily.

Iod. glycerinum. Iodi puri, Kali hydriod., āā 4·0, Glycerine 80·0, applied in lupus.

Iodo-tannin. Equal parts of iodine and tannin in 10 parts of water.

Iodo-tannic syrup. 1 teaspoonful thrice daily.

Ipecacuanhæ radix. Powder, pill, mixture, 0·04—0·08 three or four times a day. Syrup or mixture 10·0—20·0. B.P. Pulvis ipecac. co. gr. v—x. Vin. ipecac. ♏v—xl; as an emetic ℥iij—vj. Trochisci Morph. et Ipecac.

Jaborandi folia. Diaphoretic and sialogogue. Infus. 3·0—5·0—200·0. Pilocarp. hydrochlor. 0·03 to 1·0 of water as hypodermic injection, gr. ¼ to ♏xij of water.

Jalapæ radix. In powder, pill, or emulsion 0·2—0·5. B.P.

Ext. jalap. gr. v—xv. Pulv. jalap. eo. gr. xx—lx. Tinct. jalapæ ℥xxx—exx. Resina (see page 129.)

Jecoris aselli oleum. 1 to 2 dessertspoonfuls thriee daily.

Juniperus communis. Powder 0·6—1·5, two to three times daily. Infus. 15·0—30·0 to 400·0 or 800·0. B.P. Oleum juniperi ℥j—iij. Spiritus juniperi (1 in 50) ℥xxx—lx.

Kairinum (antipyretie). 1·0 in wafer and in another hour 0·25, and in four hours this should be repeated if fever continues.

Kalium aceticum solut. 8·0—30·0 in mixture daily. B.P. Potass. aeet. gr. x—xx diuretic, gr. exx—clxxx as a eathartic.

Kalium bromatum. 0·3—0·5 per day in solution or pill. Externally 1·0—8·0 or 12·0 of lard. B.P. Potass. bromid. gr. xx—lx.

Kalium carbonicum crudum. For bath 100·0—120·0. Lotion 2·0—4·0—400·0.

Kalium carbonicum depur (Sal tartari). In solution 0·2—1·0 twiee or thriee daily.

Kalium carbonicum solut. 5—25 drops twice or thriee daily. B.P. Potass. earb. gr. v—xij.

Kalium chromicum flavum. Emetie, 0·1—0·2.

Kalium citrin. (Potio Riveri antiemetiea). K. earb. dep. 4·0, sueei eitri rec. pr., Aq. eom., āā 50·0. Syr. simpl. 15·0.

Kalium ferro-tartaricum (Globuli martiales). For baths in scrofulous affeetions.

Kalium hydro-tartaric. (Cremor tartari). A powder or mixture 3·0—6·0 twiee or thrice daily. B.P. Potass. tart. aeid. gr. xx—lx. Cathartie ʒss—j daily.

Kalium hypermanganicum cryst. Caustie and disinfeetant, 0·6—0·4 to 300·0 water. B.P. Potassæ permanganas gr. i—ij. Liq. potassæ permanganatis exx—ʒss.

Kalium natronato-tartaric. (Tartar. Lixiviæ et Sodæ, Seignette Salz). In powder or solution 1·0—2·0 three or four times daily. As a purgative 2·0—25·0 onee or twiee daily. As an enema 15·0—30·0.

Kalium nitric. dep. In water, solution 4·0—300·0. B.P. gr. v—xx.

Kal. iodat. In solution or pill 0·2—1·5 three or four times a day. Eye wash 0·2—0·6 to 30. Ointment 2·0—4·0 to 30·0. Liniment. et unguent. (1 in 8¼). B.P. Potassii iodidum gr. ij—x or more.

Kal. picro-nitricum. 0·2—0·6.

Kal. et Sodæ tartras (Rochelle salt). 3·9—6·0°. B.P. ♏lx—℥ss.

Kal. stibio-tartaricum. 0·005—0·01 one to four times in the day, a full dose (emetie) 0·1—0·3. Also used as an ointment 2·0—4·0 to 15·0. Enema 3·0—10·0. B.P. Antimon. tartaratum. As a diaphoretie gr. $\frac{1}{16}$—$\frac{1}{6}$, depressant gr. $\frac{1}{6}$ to j. As an emetic gr. j—ij.

Kal. sulfuratum (Hepar sulf. kal.). In powder 0·1—0·2 three to six times a day. In eases of poisoning 1·5—6·0 at short intervals. In baths 70·0—140·0 to one bath. For lotion 4·0—8·0 to 30·0.

Kal. sulfuricum. Powder solution 0·8—4.·0 Purgative 30·0—100·0 onee or twice daily. B.P. Potass. sulph. gr. x—xx as an alterative. Potass. sulph. gr. lx as a purgative.

Kal. tartaricum boraxatum (Tartar boraxatus, Cremor tartari solut.). In solution 0·1—0·2 three times daily. Purgative 15·0—30·0.

Kal. tartaricum natronatum. (Sal seignette.) As above.

Kal. tartaricum neutrum (Tart. tartaris.). In solution and powder 0·3—1·5 four times a day. Also as a purgative 15·0—30·0. B.P. As a purgative ♏lx—exx, diuretie gr. x—lx.

Kal. vinum stibiat. To ehildren 5—10 drops, full dose 8—25. B.P. Vinum antimon. ♏x—xxx. Each fluid draehm has ¼ grain of tartarated antimony.

Kamala (Anthelmintie). In powder 8·0—12·0 with water. B.P. In powder gr. lx—exx.

Kino (Gummi kino). Powder, pill, solution 0·3—0·6. B.P. Pulvis kino eomp. (1 of opium in 20) gr. v. Tinet. kino ♏lx—exx.

Kousso (Brayera anthelmintiea). Cusso Flores 20·0 in powder with lemonade. B.P. Powder gr. exx—lx.

Laurocerasi Folia.—In mixture 5—20 drops. As an eye-wash 2·0—4·0—15·0. B.P. Aqua laurocerasi ℥v—xxx.

Liniment. caustic. Arg. nit. 5·0, dissolve in distilled water q. s., and add Ol. lini 135·0. Linim. ad Amb. Schwarz (Ol. lini 60·0, Alb. ovi 30·0, Tinct. opii 4·0, Acet. plumb. 10·0).

Linimentum saponato-camphoratum (L. volatile camphor.). Applied in Rheumatism. Lin. gingivale roborans (Catechu, Kino, āā 10·0, Spirit. cochl. 90·0, Mell. ros. 100·0). Applied when gums are spongy.

Linimentum saponato-camphorat. liquid. (Opodeldoc fluid). Applied in chronic rheumatism ; its effects are strengthened by Lin. sapon. chloroformi.

Lini Semina ; in Dect. 30·0—60·0 to 400·0 of water.

Liquor acidus Halleri. 3 parts Sp. vin. rect., 1 part Acid. sulph. conc. Dose 5—20 drops with a teaspoonful of sugar in water or 4·0 to 30·0 of syrup.

Liquor ammonii anisat. (stimulant). 10—20 to 40 drops in mixture. "Liquor iodatus Lugoli" : kalii iod. 3·0, Iod. 1·5, Aq. destill. 30·0. 5—10 drops in sugar and water. "Liquor iodo-tannicus" : Iod. 5·0, Acid. tannic. 10·0, Aq. destill. 85·0 ; Used as an injection.

Lithium carbonicum. 0·3—0·6 two or three times a day. B.P. Lithiæ carbonas, gr. iij—vj in aerated water. Liq. lith. efferves. ʒv—x.

Lobeliæ inflatæ herb. In powder 0·6—1·0 twice or thrice daily. Inf. 4·0—8·0. Tinct. 10—20 drops two to six times daily. B.P. Tinct. lobeliæ ℥x—xxx. Tinct. lobeliæ ætherea ℥x—xxx.

Lycopodii Semen. Pulv. 0·6—1·5 thrice daily.

Magnesium oxydat. (Magnes. ust.). Powder or mixture 0·3—1·5. B.P. gr. x—xxx.

Magnesium carbonicum. 0·3—1·5. B.P. gr. x—xxx.

Magnes. citricum. 0·3—0·6. B.P. gr. x—xxx. Liquor magnes. citratis ʒv—x.

Magnesium lact. (Lac magnesiæ). 4·0 Magnes. usta with 4·0 to 30·0 of water.

Magnesium sulfuricum. In solution 1·5—6·0. Also as an injection 15·0—90·0. B.P. Magnesiæ sulphas gr. cxx—ʒss.

Maltum. 30·0—150·0 of water in decoction.

Mel depuratum. In sol. or mixt. 15·0—30·0. Enema 30·0—45·0. Oxymel simp. 30·0—60·0 to 400·0. B.P. Oxymel lx—cxx.

Mentha crispa. Hba. Inf. 4·0—12·0 to 400·0 water. M. piperita Hba. Inf. 8·0—12·0 to 200·0. Oleum 1—2 drops on loaf sugar. B.P. Aq. menth. pip. ʒj—ij. Sp. menth. pip. ♏xxx—lx.

Morphinum acet. In powder, pill, or solution 0·008 to 0·04. Hypodermically 0·04—0·08. Ointment 0·08 and 0·03 with 4·0 adeps. Suppository 0·04—0·08. B.P. Morphiæ acetas $\frac{1}{8}$—$\frac{1}{2}$. Liq. morph. acet. ♏x—lx. Injectio morph. hypodermica ♏j—vj. Suppositorium Morphiæ (Hydrochloratis). Same preparations and doses as Morph. acet.

Moschus. In powder, pill, or mixture, 0·04—0·3 three to six times daily. B.P. Powder gr. v—x.

Myrrha. Powder in emulsion 0·3—0·6 two or three times a day. Extract. 1·5—2·0. B.P. Pulv. gr. x—xxx. Tinct. myrrhæ ♏xxx—lx.

Natrium aceticum (Terra. fol. Tart. sicca seu crystallis). 4·0—15·0 as a lotion, 0·2—0·8 as an injection.

Natrium chloricum or oxymuriaticum. 2·0—4·0 to 120·0 or 150·0 of water.

Natrium hydrocarbonicum (N. bicarb). 0·3—1·5. B.P. Sod. Bicarb. gr. x—xxx.

Natrium hyposulfurosum. 3·0—4·0. Externally, in a bath 30·0—400·0 of water.

Natrium phosphoricum. As a solution 0·3—1·5 diuretic; as a purgative 15·0—30·0 with 120·0 of water. B.P. Sod. Phosph. ʒss—j.

Natrium salicylicum. In powder 1·4—4·0 twice or four times a day; in solution 1—100 or 150 of water, a tablespoonful a dose; gargle 1—150—100. Gr. xv—xx.

Natrium subphosphor. 0·6—1·0—2·0. B.P. Sodæ Hypophosphis gr. v—x.

Natrium sulfuric. crystall. (Glauber's salts). 15·0—30·0. B.P. Sodæ sulphas ʒss—ʒj.

Nux vomica. In powder, pill, 0·02—0·15. For children

0·004—0·008 twice or thrice daily. Tinct. 2—4 drops Strychninum in powder, pill, or solution 0·004—0·01, two or three times a day. Strych. nitric. 0·006—0·02. B.P. Extract. nucis vomicæ gr. $\frac{1}{3}$ to j. Tinctura nuc. vom. ♏x—xxx. Strychnia gr. $\frac{1}{30}$. Liq. strychniæ ♏iv—x.

Ol. cajeputi æther. 1—10 drops on sugar.

Opium. Powder or pill 0·01—0·6; in tetanus or delirium tremens 0·08—0·3 two or three times a day. Acetum opii 2, 3, or 10 drops. Ext. opii aquos. 0·1—0·3. Liniment and ointment 1·0—2·0 to 4·0. Pulv. Doveri (0·08 opium, 0·08 ipecac. and 0·6 of sugar). B.P. Tinct. opii in drops 10—20. Pulv. ipecac. co. (Pulv. Doveri) gr. x. Pulv. opii gr. ss—ij. Ext. opii liquidum ♏x—xxx.

Papaver alb. semina. In emulsion 8·0—25·0 to 200·0 or 250·0. Papaver somniferum (Capita papaveris). In decoct. 8·0—15·0 to 100·0—200·0 of water. P.B. Decoctum (1 in 10) externally. Extract. papaver. gr. ij—v. Syr. papaver. ♏lx.

Paullinia (Pasta guaranæ). Astringent, 4·0—8·0, in diarrhœa.

Pepsinum. Powder 0·1—0·8, per dose. B.P. gr. ij—v.

Petroleum rectificat. On sugar, pill or mixture 5—15 drops. Also used as lotion, ointment, and plaster.

Phosphorus. 0·005—0·02, twice or four times a day. Ointment, linim. 0·4—0·6 to 30·0 oil or fat. B.P. Oleum phosphoratum ♏v—x. Pil. phos. (1 in 90) gr. iij—v.

Picrotoxin. 0·3—0·6 with 30·0 oil or fat.

Pilocarpinum muriaticum. Diaphoretic and sialogogue 0·03 to 100·0 of water, one teaspoonful every two hours. Pilocarpus in powder gr. xx. Pilocarp. hydrochloras (hypodermic) gr. $\frac{1}{8}$—$\frac{1}{3}$.

Piper nigrum et album. Powder 0·3—0·6. Infus. 4·0—8·0 to 400·0. A teaspoonful thrice daily. Piperinum in pill 0·3—0·6. B.P. Pulv. gr. v—xx. Confectio piperis lx—cxx. Ol. piper. æth. 2—4 drops.

Pix liquida. For inhalation in bronchial catarrh. Internally ♏xx—lx in pills with flour. Unguentum picis liquidæ.

Plumbum aceticum depur (Sacch. saturni). In powder

0·02—0·15 once or twice daily. As eye-wash 0·1—0·2 to 30·0. "Plumbum aceticum," basicum solut. (Acet. lithargyri), used as an eye-wash or injection; ointment in the proportion of 15·0—30·0 to 30·0. Aqua saturnina, also an eye-wash. "Pl. iodatum" 0·1—0·2. "Pl. oxydatum" and "Pl. hyperoxydatum." Ointment or plaster. "Pl. tannicum" only applied externally in solution. B.P. "Plumb. acetas" gr. j—ij. "Pil. plumb. cum Opio." Suppositorium; "unguentum, Plumbi carbon." "unguent., Plumbi subacet.," "Emplast. plumbi," "Plumbi subacetat. liquor," "Liquor plumbi subacet. dilutus."

Podophyllinum. Laxative 0·08—0·1 in pill. B.P. Pulv. podophy. gr. x—xx. Resin podophy. gr. $\frac{1}{3}$—$\frac{1}{2}$ to 2. Tinct. podophy. (resin gr. ij, rect. spirit ʒj) ♏xv.

Pulpa cassiæ (ex fructibus cassiæ fistulæ). Mixt. 2·0—4·0. B.P. As a laxative gr. lx, as a purgative ʒj—ij.

Pulvis alterans Plummeri (Calomel, Stibii aurant. sulf., āā 0·05, Sacch. 0·5) one to three pills given as an alterative in syphilis. B.P. (Pilula hydrargyri subchlor.comp. or Plummer's pill, 1 of calomel in 5). One to three pills daily in syphilis.

Pulvis carminativus infant. (Praceptum Strassburgense). Consists of fennel, anise seeds, sugar, opium, reduced to powder, given in the colic of children.

Pulvis diaphoreticus. Camph. 0·1, Opii 0·03, Nitrat. pot. 0·3, Sacch. alb. 10·0, given at bedtime.

Pulsatillæ nigric. herba (rec.). Inf. 2·0—6·0 to 120·0. Powder and pill 0·1—0·3. Ext. Succus. inspissat., in pill or solution 0·1—0·2 twice or thrice daily. Aq. dest. 8·0—12·0 three or four times a day. Tinct. 4—10 drops twice or four times daily. Pulsatilla powder gr. ij—iij. Tinct. pulsat. ʒss.

Pyrethri radix. In powder or pill 0·6—1·5. Inf. 0·08—0·02 to 120·0—200·0 of water. Tinct. 10—30 drops twice or thrice daily. Gargle 8·0—25·0. B.P. Tinct. Pyrethri for external use. Non-official Pulv. pyreth. Roseum (insect powder).

Quassiæ lignum. Inf. or decoct. 8·0—10·0 to 200·0—250·0 of water, a tablespoonful a dose. Extract 0·3—0·5 three or four times a day. B.P. Extract. gr. iij—v. Infusum ʒj—ij. Tinctura ♏lx—cxx.

Quercus cortex. In decoct. 30·0 to 600·0 of water boiled down to 350·0. B.P. Decoct. (1 in 16) ʒj—ij.

Rhataniæ radix. In powder 1·0—3·0 twice to thrice daily. Inf. or decoct. 8·0—10·0 to 250·0—256·0 of water. Dose tablespoonful. Extract. 0·3—0·5 twice or thrice daily. B.P. Ext. krameriæ gr. v—xx. Inf. ʒj—ʒij. Tinct. ɱlx—cxx.

Resina jalapæ. 0·5—1·0. B.P. gr. ij—v.

Rheum chinense. In powder or pill 0·1—0·3. Inf. 4·0, full dose 8·0—15·0 to 120·0 or 200·0 of water. Tinct. 30—80 drops twice or thrice daily. Pulv. rhei 5·0—10·0. B.P. Extract. gr. iij. Infus. ʒj—ij. Pil. rhei. co. gr. v—x. Syrupus ɱlx—ʒss. Tinct. ɱlx—ʒss. Vinum ɱlx—cxx.

Ricini Oleum. 15·0—50·0 in emulsion. B.P. ʒss—j for adults, ɱlx—cxx for children.

Sabadilla seed. A parasiticide in decoction 8·0—200·0; also ointment. B.P. Pulv. gr. iv—vj.

Sabinæ Cacumina. Pill. 0·3—1·5 twice or thrice daily. Inf. or decoction 4·0—8·0 to 200·0—500·0. Ext. 0·6—1·5, twice or thrice daily. Ol. 1—2 drops. B.P. Oleum sabinæ ɱj—v. Tinct. sabinæ xv—xxx. Unguent. (1 in $3\frac{3}{4}$).

Salicylic acid. Given internally in diphtheria 0·2—0·3 to 200 of water. Externally 1 part to 780 of water. Salicylic acid gr. v—x.

Salicis Cortex. 150·0—30·0—400·0 water boiled down to 200·0. Salicinum in solution or pill 0·2 to 0·6. B.P. Salicinum gr. xx—xxx, in acute rheumatism every two hours.

Sambuci Flores. 8·0—9·0, in Inf. rhei. 10·0—30·0. B.P. Aq. sambuci ʒss.

Sapo amygdalinus. Given as an enema with warm water; as an excipient for pills 0·3—0·6. S. kalinus (viridis), Picis, Sulfuratus, Spir. saponatus, for washing.

Sapo iodatus. External, made up sometimes with Ol. jecr. aselli. B.P. Sapo animalis (curd soap). Sapo durus (hard soap). Emplast., liniment. Pil. sap. c. opio. Sapo mollis (olive oil and potash).

Sarsaparillæ rad. In powder 8·0—15·0 daily. Inf. and decoct. 8·0—30·0 to 400·0—600·0 water daily. Extract 1·5—4·0

daily. B.P. Extractum liquidum ʒj—iv. Decoctum sarsæ et Decoct. sarsæ comp. half pint to one pint daily.

Scammonium. 0·6 full dose; 0·1—0·2 medium dose, given in powder or emulsion. Resina scammonii 0·1—1·5, also purgative. B.P. Scammonii pulv. gr. v. Confect. scammon. gr. x—xxx. Pulvis scammon. co. gr. x—xx. Resin. scammon. gr. iv—viij. Mistura scammon. ʒij. Pil. scammon. co. gr. v—xv.

Scillæ bulbus. In pill or powder 0·04—0·15 twice to four times a day. Inf. with wine or beer 4·0—120·0, a tablespoonful four to six times daily. Ointment. Extract. 0·1—0·2. Acet. scillæ 20—60 drops. Tincture 10—20 drops. Oxymel 15·0—30·0 in mixture. Scillitinum 0·01—0·1. B.P. Pulv. scillæ gr. i—ij. Acetum scillæ ♏xv—xl. Oxymel scillæ ♏xx—lx. Pil. scillæ co. gr. v—x. Syrupus scillæ ♏xxx—lx. Tinct. ♏xxx.

Senegæ Radix. 0·3—1·5 in powder or pill. Inf. 8·0—12·0 to 120·0 or 200·0 of water. B.P. Infusum ʒj—ij. Tinctura ♏xxx—exx.

Sennæ Alexandrinæ fol. Powder 0·3—0·6. Inf. 2·0—4·0 to 120·0. Full dose 4·0—8·0 of powder. Inf. 8·0—15·0 to 60·0 or 120·0 of water. Elect. lenitivum 120·0—200·0. Aqua lax. Viennensis, 14·0—60·0, two or four times daily. Hydromel infant. (Aq. lax. with ⅓ Syr. of mannæ) one tablespoonful. B.P. Confect. sennæ gr. lx—exx. Infusum ʒj—ij. Mist. sennæ comp. ʒj—iss. Syrupus sennæ ♏lx—exx. Tinctura ♏cxx—ʒss.

Serpentariæ Radix. Powder 0·6—1·5. Inf. 8·0—15·0 to 120·0 or 200·0. B.P. Powder gr. x to xv. Infusum ʒj—ij. Tinctura ♏xxx—exx.

Sinapis nigra (seed). 1·5 two or three times daily with syrup. Also as a rubefacient; for a lotion 8·0—15·0 to 200·0. In bath (hot) 200·0—250·0. Mouth, as a gargle 2·0—4·0 to 200·0. Ol. sinap. æth. 6 drops, with olive oil 24 drops, and alcohol 40, as a rubefacient. Sinap. alba half teaspoonful of the seed at breakfast and luncheon with water. B.P. "Cataplasma," "charta," "linim. sinap. comp." "Oleum sinapis."

"Species lignorum." (Sarsap. Bardanæ, āā 400·0. Liquorice

root, Santal. rubri, āā 100·0. Sassafras, Guaj. Junip., āā 400·0.) "Sp. pectorales": (Hepat., Pulm., Scab., Alth., Liquir, Hord., perl. Siliq., Ficus, āā 1200·0. Verbasci Malv, āā 100·0. Anisi stell. 35·0). "Sp. Althææ": (Hba. Alth. 800·0, Rad. Alth. 400·0, Liquir 200·0, Malv. flor. 60·0). "Sp. aromaticæ": (Hys., Rosm., Marub., Rut., Salv., Thym., Satur., Scordii., Menth. pip., Lavand., āā equal parts). "Sp. emollientes": (Alth., Malv., Mellilot., āā 400·0. Sem. lini. 800·0).

"Species ad cataplasma." (Fol. alth., malvæ., Hbæ. melil., Flor. chamom., Sem. lini, āā equal parts.) "Species laxant" (Saint Germain) (Fol. sennæ, spirit. sine res., 16·0. Fol. Sambuci 10 0, Semin. Fœn. anisi, āā 530·0, Tart. depur. 310·0), "Sp. narcoticæ": (Hb. Bellad., Conii mac., hyoscy., Flor. chamom., āā equal parts).

Spiritus ætheris muriat. (Sp. salis dulcis). 10—30 drops. Spiritus æther. nitrici, see Ether. Spirit. æth. sulfuric. (Liq. Hoffmani). 10—30 drops. B.P. Spirit. Mindereri (Liq. ammon. acet.) ʒij—vj.

Stramonii folia. In powder or pill 0·04—0·15 once or twice daily. Inf. 1·5—3·0 to 120·0—200·0. Semina stramonii, in powder or pill 0·04—0·15. Ext. 0·04—0·5. Tinct. 4—5 drops twice or thrice daily. B.P. Extractum stram. (Sem.) gr. ¼. Tinctura stramon. (Sem.) ♏x—xx.

Strychninum. See nux vomica. B.P. Strychnia $\frac{1}{30}$ gr. Liquor strychniæ ♏iv—x=gr. $\frac{1}{30}$—$\frac{1}{12}$ of strychnia.

Sulfur præcipitatum (Lac sulphuris). 0·15—1·0. Sulfur sublimatum (Flor. sulph.) 0·3—0·6. Also purgative 1·5—4·0. Sulfur iodatum 0·5—15·0 to 30·0 of lard, used in acne. B.P. Sulphur præcipitatum gr. xx—lx. Sulphur sublimatum gr. x—lx. Confect. sulph. gr. lx—cxx. Unguentum sulphuris (1 in 5). Unguent. Sulph. Iodidi (1 in 15½).

Sumbul radix. 0·15—0·3 to 4 0—12·0 to 200·0 in inf.; tinct. 10—40 drops. B.P. Tinctura ♏xv—xxx.

Tamarindi fructus. 30·0—60·0 to 250·0. Decoct. pulp. 15·0—30·0. B.P. In mixture ʒij and upwards.

Tanninum. See Acid. tannicum.

Taraxacum (Hba). Succus expr. 60·0—120·0 daily. Root

36·0—60·0 to 300·0 aq. decoct. Extract. 10·0—15·0 in solution. B.P. Decoctum ʒij—iv. Extract. gr. v—xv. Succus cxx—ʒss.

Tartarus emetic. See Kali stib.

Terebinth. commun. Ol. tereb. rect. 10—20 drops, 8·0—15·0, as an emulsion with white of egg; as an enema 15·0. Ol. Terebinth. ozonisatum 5—10—20 drops in sugar water. B.P. Ol. Terebinth. ♏x—xxx; as an anthelmintic cxx—ʒss. Confect. terebinth. gr. lx—clx. Enema. Liniment, Liniment. terebinth. acet. Unguent. Terebinth. (1 in 2—8).

Thymolum. 0·05—100·0 of water internally; outwardly, as a disinfectant, 1 part to 1000 of water.

Tilia europæa (Flores). 8·0—15·0 to 200·0 of infusion.

Tinctura cannabis indicæ. 2—10 drops thrice daily. B.P. v—xx.

Tinctura diuretica (Hufelandii). 20—30 drops every three hours.

Tinct. ferri acet. ætherea. 5—10 drops thrice daily.

Tinct. ferri pomat. 10—20 drops.

Tormentilla radix. Astringent 8·0—15·0 to 200·0—250·0 as Infus. Pulv. 0·3—15·0 three or four times a day. Extract. 0·04—0·08.

Trifolium fibrinum (amarum). Inf. aq. v. vin. 2·0—15·0 to 25·0. Ext. aq. 4·0 per day. Succus expressus 4·0—8·0.

Unguentum cantharidum. Epispastic or irritant.

Unguentum diachylon (Dr Hebra). Applied, in various skin diseases, spread on linen.

Ureum. 0·3—0·6 per day in solution. Ur. nitric 0·08—0·15 in pill twice or thrice daily.

Uvæ ursi folia. 15·0—20·0 to 250·0 of decoct. B.P. Pulv. gr. x—xxx. Infusum ʒj—ij.

Valerianæ radix. 8·0—15·0 to 200·0 or 250·0 as infusion, powder, pill, 0·3—1·5 twice or thrice daily; lotion 15·0—30·0 Aq. dest. Oleum æthereum 1—2 drops on sugar. Ext. aquos. 0·3—0·6 p. d. Tinct. 10—20 drops p. d. B.P. Pulv. valerianæ gr. x—xxx. Infusum ʒj—ij. Tinctura ♏lx—cxx. Tinct. valer. ammoniata ♏xxx—lx.

Vanillæ siliquæ (Fruct.). Powder, pill, 0·2—0·6. Infusum 5·0—10·0 to 100·0—140·0 of water. Tinct. 10—20 drops p. d.

Veratrinum. 0·004—0·2 in alcohol, rarely given internally but applied externally 0·15—0·3 with 4·0 of lard. B.P. Veratri Viridis Tinctura, dose ♏v—xx.

Veratrum album. Rad. 0·6—1·5 to 120·0—200·0. Externally, ointment 4·0—100·0 or 200·0 of lard. B.P. Unguentum veratriæ (1 in 60).

Verbasci Flores (Diaphor.). 8·0—15·0 to 400·0 infusion.

Xanthi spinosi Folia. Powder 100·0—500·0 in water or tea; given in hydrophobia.

Zedoariæ Radix. In powder 0·6—1·5 p. d.

Zibethum. 0·3—0·6 in powder.

Zincum aceticum. 0·6—1·5; as an injection 0·15—30·0. B.P. gr. j—ij as a tonic.

Zincum chloratum. Externally as a paste or injection 0·08—0·3 to 30·0 of water. Ointment 2·0—4·0 with 30·0 Ungt. rosæ. B.P. Zinci chloridum (Liquor zinci chloridi, Sir William Burnett's disinfecting solution).

Zincum oxydatum (Flores zinci). Powder 0·02—0·03 two to four times daily. Ointment 8·0—30·0 of lard. B.P. Zinci oxidum gr. ij—x. Unguent. zinci (1 in 6½).

Zincum sulfuricum. Powder or pill 0·01—0·02, twice or thrice daily; full doses 0·1—0·6 every ten minutes as an emetic. Eye-wash 0·07—0·02 to 100·0 of aq. Injection 0·15—0·4 to 100·0 of aq. B.P. Zinci sulphas, as a tonic gr. j—ij; emetic gr. x—xxx; injection gr. j—iij to ʒj of water.

Zingiberis radix. Powder 0·3—0·6 one to three times daily. Inf. Aq. v. vinos. 4·0—8·0 to 200·0. B.P. Pulv. gr. x—xx. Syrupus ♏lx—ʒss. Tinctura ♏x—xxx. Tinct. zingib. fort. ♏v—xx.

ROUTES FROM LONDON TO VARIOUS HEALTH-RESORTS

THE question of expense to different health-resorts forms a material inquiry before determining to visit any particular place. The medical adviser should, to a certain extent, be familiar with the relative charges for different routes to the principal continental centres, from which various bath and health-resorts can be reached; and it is necessary for the patient to know them also. The following routes for land and sea can be recommended.

GERMAN AND AUSTRIAN HEALTH-RESORTS

The principal baths in Germany may be approached from London *viâ* Queenboro' and Flushing to Cologne, and from Cologne (unless through tickets are taken from London), tickets can be obtained for many of the best continental spas. Starting from London at 8.25 p.m., Flushing is reached at 6.30 a.m. After breakfast the train starts at 7.20 a.m. *viâ* Breda, and reaches Cologne at 2.52 p.m.

The expense of this journey is, 1st class £2 15s. 2d., or 2nd class £1 19s. 2d. Most travellers take 2nd class railway tickets and saloon cabins on the steamer, for which an extra fee of 10s. is charged. The fatigue of a railway journey is thus to a great extent obviated. The time from London is 17½ hours.

The cabins on board steamer should be secured before starting from London. The express train starts from Cologne at 5 p.m. and arrives at Frankfort at 10.10 p.m., when a delay of a night is advisable.

Homburg can be reached the same evening, the expenses of the journey to it from London being, 1st class £4 9s. 6d., 2nd class £3 5s. 3d.

From Frankfort at 11.20 a.m. *viâ* Aschaffenburg, Würzburg is reached at 2.34 p.m. and Nurnberg at 6.33 p.m. Here it is advisable to rest a night and then proceed at 6.15 a.m. *viâ* Eger to Carlsbad, the train arriving at 2.55 p.m. From Eger to Marienbad at 3.11 p.m., from Eger to Franzensbad at 3.56 p.m., the expenses of the journey from London to Carlsbad being, 1st class £6 16s. 8d., 2nd £4 19s. 8d., from London to Marienbad, 1st class £6 15s., 2nd £4 18s., from London to Franzensbad, 1st class £6 4s. 4d., 2nd £4 9s. 0d.

Those who are strong enough to stand the fatigue of night travelling can, by the route mentioned, reach Carlsbad from London in 1 day 12 hours and Marienbad in 1 day 11 hours.

Teplitz.—From London by the Queenboro' and Flushing route—thence by Breda, Hanover, Leipsic, to Dresden, afterwards from Dresden to Bodenbach and Aussig, and Teplitz. 1st class £6 2s. 6d., 2nd class £4 9s. 8d. Time 2 days.

For Kissingen, Wiesbaden, Kreuznach, Schwalbach, Soden, and various other spas in Central Germany, the same route as far as Frankfort is recommended.

The easiest way to reach Aix-la-Chapelle or Spa, from London is by Calais or Ostend to Brussels, thence to either of the two spas mentioned. Expense: 1st class £3, 2nd £2 3s. 6d. Time 14½ hours for Aix-la-Chapelle. If by Harwich to Antwerp and Aix-la-Chapelle, 1st class £1 16s. 8d., 2nd £1 3s. 4d. Time 21¼ hours. To Spa by the same routes the expenses vary, £3 2s. 3d. 1st class, to £2 6s. 6d. 2nd. Time 13 hours. By Harwich and Antwerp £1 18s. 1d. 1st class, £1 4s. 2d. 2nd class. Time 20 hours.

SWISS HEALTH-RESORTS

To various Swiss health-resorts it is advisable to proceed to Basle *viâ* Calais or Ostend to Brussels. Expenses: £5 18s. 9d. 1st class, £4 7s. 3d. 2nd class. Time 26 hours. Or by Harwich and Antwerp to Brussels, 1st class £4 7s. 11d., 2nd class £3 2s. 5d. Time 35 hours. By Queenboro' and Flushing, Basle can be reached *viâ* Brussels in 26 hours, the expenses being £5 0s. 6d. 1st class, £3 13s. 2nd class; or by "New St Gothard Route" from London *viâ* Calais, Boulogne, Amiens, Reims, Belfort, to Basle, 1st class £5 3s. 6d, 2nd class £3 15s. 3d. Time 19½ hours.

From Basle to Davos the route is by Zurich to Chur by rail, thence by diligence; or to Landquart by rail, thence by diligence. Total expense from London: 1st class £6 14s. 4d., 2nd class £4 18s. From London to Basle and Tarasp, 1st class £7 1s., 2nd class £5 4s. From London to Basle and St Moritz, 1st class £7, 2nd class £5 3s. 6d. From London to Basle and Pontresina a few shillings extra. The same routes may be taken.

Andermatt.—Route from London to Lucerne by Dover, Calais, and St Gothard route. From Lucerne to Göschenen, thence to Andermatt by coach. 1st class £6, 2nd class £4 10s. Time to Lucerne 23½ hours.

TYROLESE HEALTH-RESORTS

Meran.—From London to Basle by the previous routes mentioned, then to Innsbruck. From Innsbruck to Botzen and thence by rail to Meran, or it can be approached by diligence from St Moritz *viâ* Tarasp. By steamer and rail, 3 days, by steamer, rail, and diligence, 4 days, the expense being about £6.

FRENCH HEALTH-RESORTS

The health-resorts in the Pyrenees, as Bagnères de Bigorre, Barèges (France) are reached *viâ* Paris and Bordeaux to Tarbes; or as Cauterets *viâ* Paris to Orleans, Toulouse, thence to stations (Pyrenees). The time from London is about 28 hours by either route.

Plombières, *viâ* Paris to Dijon and Nancy. 1st class £5 0s. 7d., 2nd class £3 15s. 8d.

Bourboule (La) *viâ* Paris to St Germain-des-Fosses to Clermont-Ferrand to Laqueuille, thence coach. 1st class £5 13s., 2nd class £4 3s. 4d. Time 25 hours.

Aix-les-Bains; Paris, Macon, Ambérieu, and Culoz to Aix. 1st class £5 19s. 4d., 2nd class £4 9s. Time 22 hours.

RIVIERA HEALTH-RESORTS

The new "St Gothard Route" enables the passenger starting from London, with through tickets, to reach the various health-resorts of the Riviera by easy stages, if desired; or without breaking the journey until he has arrived at his destination, the expenses being to Nice, 1st class £8 8s. 2d., 2nd class £6 6s. 7d.; to Pau, 1st class £6 17s. 6d., 2nd class £5 3s. 6d.; to Cannes, 1st class £8 4s., 2nd class £6 4s.

SEA VOYAGES

Steamers from London

Peninsular and Oriental Steamship Company.—Melbourne and Sydney. Return passage 100 guineas. Available for 9 months. Average time at sea, outward and home, 6 months.

Orient Line.—1st class 100 guineas, 2nd class £65. Available for 12 months.

Union Line to Cape Town £35; to Natal £42.

Castle Line to Cape of Good Hope £35; Natal £42.

New Zealand Shipping Company to Otago £60, return £40. Madeira, 19 guineas; return voyage 12 guineas.

Steam-Yacht Ceylon.—Three Months' Winter Cruise, probably in winter of 1885-6 to West Indies, 1st class £220, cabin for two persons, £150 for whole cabin.

Sailing Ships

Loch Line from Glasgow to Melbourne and back to London, £80. Average length of voyage outwards and home, 9 months.

Albion Shipping Company.—43 guineas, London to New Zealand.

THERAPEUTIC INDEX

Acidity of Stomach.—Thermal: Mont-Dore 91, Neuenahr 92, Vichy 47, 101. Cold: Apollinaris 80, Bilin 82, Fachingen 85, Grauhof 87, Salzbrunn 95, Vals 101.

Ague.—Bath 9, 81, Carlsbad 88, Marienbad 29, 91, Tarasp 62, 99, Spa 97.

Amenorrhœa.—Bath 9, 81, Franzensbad 36, 85, Homburg 39, 87, Krankenheil Tölz 89, Kreuznach 89, Schwalbach 96.

Anæmia.—Bocklet 82, Brückenau 83, Ems 85, Friersbach 86, Hall 87, Harrogate 19, Homburg (Louisen) 39, 87, Karlsbrunn 89, Rosenheim 94, Sangerberg 95, Schandau, 95, Schwalbach 96, Spa 97, St Moritz 97, Tunbridge Wells 18.

Angina Pectoris.—Teplitz 33, 100, Ustron 101.

Asthma.—Amélie-les-Bains 79, Bournemouth 82, Isle of Wight 103, Lippspringe 90, Montreux 91, St Andreasberg 80.

Biliousness.—Carlsbad 23, 88, Cheltenham 14, 104, Elster 85, Franzensbad 36, 85, Friedrichshall 85, Harrogate 19, Homburg 39, 87, Kissingen 89, Leamington 15, Marienbad 29, 91, Pharmac. remedies 72, 73, Tarasp 62, 99.

Bladder, catarrh.—Apollinaris 80, Baden 81, Bath 9, Contrexéville 84, Fachingen 85, Grauhof 87, Langenbrücken 47, Leuk 90, Neuenahr 91, Rosbach 94, Vichy 101, Wildungen 104.

Bladder, irritable.—Apollinaris 80, Bath 14, Langenbrucken 90, Selters 96, Wildungen 104.

Boils and Carbuncles.—Bagnerès-de-Bigorre 81, Lippspringe 90, Spa 97. Arsenical spas: Bourboule les Bains 82, Mont-Dore 91.

Bright's Disease, chronic.—Pure iron springs: Alexisbad 79, Brückenau 83, Rosenheim 94, Schandau 95, Schwalbach 96, Spa 97, Tunbridge Wells 18. Compound iron springs: Griesbach 87, Homburg (Louisen) 87, Marienbad (Ambrosiusbrunnen) 29, 91, Pyrmont 93, St Moritz 97.

Bronchitis, chronic.—Climatic: Bournemouth 82, Canues 83, Gmunden 86, Hyères 88, Ischl 88, Isle of Wight 103, Madeira 90, Meran 91, Neuenahr 92, Pau 92, Reichenhall 93, Torquay 17, 104, Weilbach 102, Weissenbourg 102. Mineral: Ems 85, Lippspringe 90.

Calculi.—"Uric acid:" Contrexéville 84, Neuenahr 92, Vichy 47, 101. "Phosphatic:" Leuk 90, Vichy 47, 101.

Cardialgia.—Carlsbad 23, 88, Leamington 17, Vichy 47, 101.

Catarrh, bronchial.—Whey cure: Gais 86. Mineral spas: Aix-les-Bains 78, Amélie-les-Bains 79, Baden in Austria 81, Ems 85, Laudeck 90, Neu-Ragoczy 92, Reichenhall 93, St Andreasberg 80. Climatic: *Vide* Bronchitis, chronic.

Catarrh, gastro-intestinal.—Bath 9, Cheltenham 14, Homburg 39, 87, Marienbad 29, 91, Roisdorf 94, Rosbach 94, Tarasp 62, 99.

Catarrh, nasal.—Ems 85, Weissenbourg 102.

Catarrh, uterine.—Ems 85, Krankenheil Tolz 97, Kreuznach 89, Münster am Stein 91, Spa 97.

Catarrh, vesical.—*Vide* Bladder.

Chancres.—*Vide* Syphilis.

Chlorosis.—Alexisbad 79, Altwasser 79, Cannstadt 83, Flinsberg 85, Homburg 39, 87, Marienbad (Ambrosins) 29, Schwalbach 96, Spa 97.

Chorea.—Bourboule-les-Bains 82, Mont-Dore 91 (arsenical mineral springs).

Climatic Health Resorts.—Biarritz 82, Botzen 82, Bournemouth 82, Churwalden 84, Cuxhaven 84, Davos Platz 54, 84, Dieppe 84, Engelberg 85, Flinsberg 85, Gries 87, Hyères 88, Kainzenbad 88, Madeira 90, Malaga 90, Maloja 91, Meran 91, Montreux 91, Nice 92, Palermo 92, Pau 92, Pisa 93, Reichenhall 93, Rigi-Kaltbad 94, Salzsburg 95, San Remo 95, Schandau 95, Schmeks 96, St Andreasberg 80, Wiesen 103.

Climatic Health Resorts with Moor Baths.—Alexandersbad 78, Bormio 82, Carlsbad 88, Carlsrühe 83, Driburg 84, Franzensbad 85, Rheinfelden 94, Salzbrunn 95, Salzburg 95, Schleusingen 95, Schmalkalden 95.

Climatic Health Resorts with Pine Baths.—Alexandersbad 78, Alexisbad 79, Schleusingen 95, Schmalkalden 95.

Colic, hepatic.—Carlsbad 23, 88, Cheltenham 14, 104, Homburg 39,

87, Kissingen 89, Leamington 17, Marienbad 29, 91, Scarborough 95, Tarasp 62, 99, Vichy 47, 101.

Constipation.—Æsculap 80, Buda Pesth (Hunyadi Janos) 83, Cheltenham 14, 104, Friedrichshall 86, Homburg 39, 87, Kissingen 89, Leamington 15, Nauheim 92, Püllna 93, Saidschütz 94, Scarborough 95, Seidlitz 94, Tarasp 62, 99.

Corpulence.—Homburg 39, 87, Marienbad 29, 91, Meran (grape cure) 58, 91, Tarasp 62, 99.

Coryza.—Ems 85, Gmunden 86.

Debility.—Buxton 12, Carlsrühe 83, Fricrsbach 86, Gastein 86, Matlock 11, St Moritz 97, Neustadt-Eberswalde 92.

Diabetes.—Carlsbad 23, 88, Ischl 88, Neuenahr 92, Vichy 47, 101.

Diarrhœa.—Spa 97.

Dipsomania.—Sea voyage 72.

Dropsy, cardiac.—Brückenau 82, Cannstadt 83, Pyrmont 93, Schwalbach 96, St Moritz 97, Steben 98, Sternberg 98.

Dropsy, renal.—Faehingen 85, Rehburg 93, Reinerz 93, Leuk 90, Vichy 47, 101.

Dropsy, hepatic.—Cheltenham 14, 104, Griesbach 87, Homburg 39, 81, Kissingen 89, Leamington 17, Tarasp 62, 99.

Dysentery, chronic.—Carlsbad 23, 88, Franzensbad 38, 85, Marienbad 29, 91, Rehburg 93, Spa 96, Tarasp 62, 99.

Dysmenorrhœa.—Bath 9, Driburg 84, Ems 85, Franzensbad 35, 85, Kissingen 89, Krankenheil Tolz 89, Kreuznach 89, Schmeks 96.

Dyspepsia.—Carlsbad 23, 88, Homburg 39, 87, Kissingen 89, Leamington 17, Marienbad 29, 91, Scarborough 95, Tarasp 62, 99.

Dyspnœa.—Various whey cures: Gais 86, Meran 91, Reichenhall, 93.

Eczema.—Bath 9, 81, Bagnères-de-Bigorre 81, Harrogate 19, Lippspringe 90, Pisa 93, Reutlingen 94, Schlangenbad 95, Strathpeffer 21, 104, Wildungen 104. Table waters: Apollinaris 80, Grauhof 87, Roisdorf 94, Rosbach 94, Vichy 10.

Flatulence.—Bath 19, 81, Buxton 12, 83, Carlsbad 23, 88, Homburg 39, 87, Nauheim 92, Neuhaus 92.

Gall-stones.—Carlsbad 23, 88, Ems 85, Kissingen 89, Rosbach 94, Selters 96, Vichy 47, 101, Weilbach 102.

Gastralgia.—Carlsbad 23, Neuhaus 92, Neustadt 92, Niedernau 92, Vichy 47.

Gastric catarrh.—Weilbach 102.

Goitre.—Hall 87.

Gonorrhœa, chronic.—Pyrmont 93, Vichy 47, 101.

Gout.—In strong constitutions: Carlsbad 23, 88, Elster 85, or, if time short, Vichy 47, Franzensbad 35, Marienbad 29, 91, Nenndorf 92. In gout complicated with chest complaints: Ems 85, or Baden-Baden 81, Leamington 17, Pfaffers 93, Ragatz 93. In thin patients with no chest complaints: Aix-les-Bains 78, Aix-la-Chapelle 78, Harrogate 19, Homburg 39, Kissingen 89, La Bourboule 82, Leamington 17. To many slightly affected the thermal waters of Aix-les-Bains 78, Bath 12, 81, Gastein 86, Schlangenbad 95, Teplitz 33, or Wildbad 103.

Grape cure.—Arco 80, Meran 58, 91, Rheinfelden 94, Vevey 101.

Gravel.—Rohitsch-Sauerbrunn 94, Roisdorf 94.

Hæmaturia.—Contrexéville 84, Vichy 47, 101.

Hæmorrhoids.—Muriated saline: Homburg 39, Kissingen 89, Tarasp 62, 99. Sulphur thermal: Aix-les-Bains 78, Amélie-les-Bains 79, Baden in Switzerland 81, Eaux Bonnes 82, Cauterets 84, Eaux Chaudes 85. Sulphur cold.—Eilsen 85, Harrogate 19, Moffat 22, Nenndorf 92, Strathpeffer 21, 104.

Headache.—Sea voyages: Lippspringe 90, Tarasp 62, 99.

Hemiplegia.—Bath 9, Teplitz 33, 100, Wildbad 103.

Hyperæsthesia, nervous.—Bath 9, 81, Bormio 82, Buxton 12, 83, Franzensbad 36, 85, Lucca 90, Neuhaus 91, Ragatz 93, Schlangenbad 95, Teplitz 33, 100, Wildbad 103.

Hysterical affections.—Ems 85, Franzensburg 36, 85, Lippik 90, Lippspringe 90, Teplitz 100, Wildbad 103.

Hydropathic health resorts.—Brunnthal 82, Falkenstein 89, Görbersdorf 86, Grafenberg 86, Hofheim 87, Johannisberg 88, Lauterberg 90, Rigi-Kaltbad 94, Schleusingen 96, Schmeks, 95, Schweizermühle 96.

Indigestion. See Dyspepsia, 141.

Insomnia.—Franzensbad 56, 85, Marienbad 29, 91, Wildbad 103.

Jaundice.—Bath 9, 81, Carlsbad 23, 88, Cheltenham 14, 104, Homburg 39, Kissingen 89, Leamington 17, Marienbad 29, 91, Tarasp 62, 99.

Laryngitis, chronic.—Ems 85, Gmunden 86, Soden 96, St Andreasberg 80.

Leucorrhœa.—Ems 84, Franzensbad 36, 85, Kissengen 89, Kreuznach 89.

Liver congestion.—Carlsbad 23, 83, Cheltenham 14, 104, Elster 85, Homburg 39, 87, Kissingen 89, Leamington 17, Marienbad 29, 91, Obladis 92, Tarasp 62, 99.

Locomotor ataxy.—Sea voyages: Teplitz 33, 100, Wildbad 103.

Lumbago.—Buxton 99, Franzensbad (mud baths) 33, 85, Strathpeffer 21, Teplitz 33, 100, Wildbad 103.

Nervous debility.—Alexisbad 79, Altwasser 79, Bath 98, Cleve 84, Gastein 86, Ischl 88, Œyenhausen 92, Pfaffers 93, Salzburg 95, Schwalbach 96, Teplitz 33, 100, Wildbad 103.

Neuralgia.—Alexisbad 79, Altwasser 79, Bocklet 82, Bonnes 82, Brückenau 83, Cleve 84, Eaux Chaudes 85, Ischl 88, Schandau 95, Schwalbach 96, Spa 97, St Moritz 97.

Paralysis depending on muscular changes.—Baden-Baden 81, Bagnères-de-Bigorre 81, Bath 9, 81, Gastein 86, Johannisberg 88, Lucca 90, Œyenhausen 92, Plombières 93, Pfäffers 92, Ragatz 93, Teplitz 33, 100, Wildbad 104, Wildungen 103, Woodhall 104.

Phthisis.—General consideration of temperature and altitude settling the choice of therapeutic means. Advantages of high altitudes: Andermatt 68, Davos Platz 54, 84, Malaga 91, Meran 58, 91, Wiesen 103. Advantages of climatic health resorts: Ajaccio 79, Alt-Haide 79, Arco 80, Botzen 82, Bournemouth 82, Cannes 83, Churwalden 84, Engelberg 85, Hyères 88, Madeira 90, Nice 92, Pau 93, Pisa 93, Streitberg 98. Advantages of sea voyages 72. Advantages of grape cure: Meran 58, 91, Vevey 101. Advantages of hydrotherapeutics: Falkenstein 89.

Phthisis, chronic.—Sulphur waters, hot: Aix-les-Bains 78, Amélie-les-Bains 79, Baden in Austria 81, Eaux Bonnes 85, Eaux Chaudes 85, Gleichenberg 86. Cold: Eilsen 85, Enghien 85, Görbersdorf 86, Harrogate 19, Lippspringe 90, Moffat 22, 104, Nenndorf 92, Neu-Ragoczy 92, Strathpeffer 21, 104, Weilbach 102.

Pleurisy, chronic.—Andermatt 68, Davos Platz 54, 84, Meran 58, 91, Montreux 91, Wiesen 103.

Prurigo.—Aix-les-Bains 78, Aix-la-Chapelle 78, Weilbach 102.

Psoriasis.—Earthy spas: Contrexéville 84, Lippspringe 90, Weissenbourg 102, Wildungen 103. Mineral arsenical springs: Bagnères-

de-Bigorre 81, Mont-Dore 91. Table waters: Contrexéville 84, Vichy 47, 101, Taunus 4.

Purpura.—Elster 85.

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